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Feeding and Managing Baby Pigs



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Figure 1. A solid wood partition is used to separate the two farrowing stalls. It aids in preventing drafts. The heat lamp is situated so both litters benefit from its heat.

On the average, from two to three pigs per litter are lost during the period from farrowing to weaning. These losses result from crushing, severe diarrhea, starvation, anemia, congenital defects, and bleeding from the navel at birth. If diseases such as transmissible gastroenteritis (TGE) or pseudorabies are encountered, baby pig losses will be considerably higher.

Poor management perhaps contributes more to baby pig losses than any other factor. If producers follow a sound management program, they should experience fewer death losses and other problems that lead to unthrifty pigs.

GENERAL MANAGEMENT PRACTICES

Use Farrowing Stalls

Farrow sows in stalls or provide guard rails in pens to protect pigs from being overlain.

Provide Supplemental Heat

Baby pigs cannot adjust to temperature variations until they are about 3 days old. Therefore, when necessary, supplemental heat should be provided to prevent chilling. Hang heat lamps by a safety chain or wire and equip them with protectors or shields. When possible, position lamps so they will disconnect from the electrical outlet before they touch the bedding if the support (chain or wire) breaks. You can reduce the temperature gradually by raising the heat lamps. Optimum temperature for the very young pig is about 90° F, whereas about 70° F is adequate for 5- to 6-week-old pigs. Infrared heaters, heated floor systems, or electrical heating pads are other effective means of providing supplemental heat.

Prevent Drafts

Reduce drafts by using solid partitions between stalls or pens. If farrowing stalls are set up over completely slotted floors (also wire or expanded metal type flooring), you will find it beneficial to cover the floor surface along the stall sides with a solid covering material for the first few days after birth. Such materials as plywood, rubber mats, or old carpet often are used for covering. This will prevent drafts that may rise from the pit or area below.

Clean Pens Regularly

In farrowing facilities where slotted floors are *not* used, clean the pens or stalls regularly and provide clean, dry bedding (wood shavings or straw). The bedding will help keep the floors dry and prevent chilling. Avoid using excessive amounts.

Equalize Litter Size

When possible and if necessary, equalize litter size to the number of functioning teats or to the milking ability of the sow. Transfer pigs before they are 3 to 4 days old, and put them in a litter where a teat order has not yet been established. This means transferring older pigs to new litters. It may be necessary to mask the odor of pigs if you transfer them after they are 3 to 4 days old, if the sow and litter are kept in pens.

Disinfect Navels

As soon after birth as possible, disinfect the navels with tincture of iodine. This should help reduce entrance of infectious organisms, especially if you administer the iodine immediately after birth. If pigs are bleeding excessively from the navel cord, tie off the cord as shown in figure 2.



Figure 2. The navel cord should be tied off within an inch of the body.

Clip Needle Teeth and Tails; Notch Ears

These three practices can be performed at the same time to avoid handling the baby pigs several different times.

Clipping Needle Teeth. Clip needle teeth within 24 hours after birth. Clipping them will prevent pigs from cutting the sow's udder and cutting other pigs in the litter.

Clipping Tails. If tail biting has been a problem and if pigs are raised in a confinement system, you may wish to clip their tails. Leave about $\frac{1}{4}$ to $\frac{1}{2}$ inch (figure 4). Tail clipping is best done when pigs are only a day old.

Notching Ears. Pigs should be ear notched so they can be properly identified (figure 5). At this time, observe the underlines of gilts and record the number of teats. There should be at least six well-spaced teats on a side. In a commercial herd, it is unnecessary to identify each pig in the litter. However, gilts from good litters and with adequate underlines should be ear notched.

Prevent Iron Anemia

Iron should be given to young pigs to prevent anemia, especially if they are not permitted to come in contact with fresh sod or soil. A common way to prevent anemia is to inject about 150 to 200 milligrams of iron in the form of iron dextran into the muscular tissue. The tissue around the neck is preferred over the ham area (figure 6).

Caution: Wait until pigs are about 2 to 4 days old before giving shots. Injecting iron into pigs 24 hours old or less may induce shock. *Don't give overdoses of iron to young pigs.*



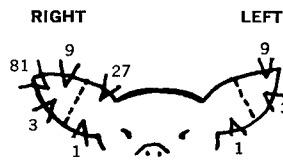
Figure 3. Baby pigs have four pairs of needle teeth, two on the upper and two on the lower jaw. Use a side cutter to remove these teeth.



Figure 4. A dull side cutter works best for clipping tails. Don't forget to disinfect the cut area with iodine.



Figure 5. Ear notches should be made as large as possible so they can be easily seen later.



Right ear: litter number
Left ear: pig number

LITTER MARK: The right ear is used for the litter mark. All pigs in the same litter must have the same ear notches in this ear. The right ear is on the pig's own right.

INDIVIDUAL PIG MARKS: The left ear is used for notches to show individual pig number in the litter. Each pig will have different notches in this ear.

For further information, obtain a copy of Animal Husbandry Fact Sheet 2, "Methods of Pig Identification," through your county extension office.

Ear notching system to identify litters and pigs in litter.



Figure 6. Inject iron into the neck tissue just under the skin.

You *cannot* prevent iron anemia in baby pigs by increasing the iron content of the sow's diet in an attempt to increase significantly the iron content of her milk.

Other means of getting iron into baby pigs are: (1) using reputable commercially prepared iron-containing products, (2) placing clean soil or sod in the creep area, (3) swabbing the sow's udder daily with a saturated iron sulfate solution, or (4) adding an iron-containing compound to the baby pigs' water.

Castrate Boars at 2 to 3 Weeks

Castrating causes less shock or stress on pigs when they are 2 to 3 weeks old. They are also easier to handle at this time.

Pen Sows and Litters Together at Proper Time

In operations where sows and their litters are grouped, do not pen them together until the pigs are at least 10 days old. Age differences among litters should be no more than a few days, and groups should not be larger than five or six sows and their litters.

Provide a Creep Feeding Area

When pigs are about a week old and until they are 21 days old, a prestarter containing 20 to 22 percent protein *may be provided* in a creep feeding area. Arrange this area in the farrowing stall or pen in such a manner that it is inaccessible to the sow. Be sure a supply of fresh water is always available. During the colder months, place a heat lamp in the creep area to draw pigs to feed and water.

Generally, pigs provided with a prestarter learn to eat at an earlier age than those not provided with one. Even so, there may be little or no economic gain (heavier weaning weights or performance after weaning) from feeding a prestarter until pigs are 3 weeks old.

When pigs are 3 weeks old, feed an 18 to 20 percent protein starter in a creep area. Initially, provide only a small amount at a time to keep the feed fresh. Throw out all wet and contaminated feed.

Wean Pigs Properly

Pigs can be weaned any time between 3 to 8 weeks of age, depending on the manager's ability, the hog production plan, and available facilities. In general, pigs can be weaned at 12 to 15 pounds, regardless of age, if they are thrifty and are eating well. To avoid complications at this time, provide warm, dry, draft-free quarters.

Do not start pigs in large groups. Small groups of pigs (20 to 25 head per pen or possibly as many as 40 in a confinement system with slotted floors) will do best. You may find it beneficial to leave the pigs as litters for the first few days after weaning rather than try to mix or group them.

Feed the 18 to 20 percent protein starter until pigs average about 50 pounds. This diet should provide adequate minerals and vitamins, include an effective antibiotic drug preparation, and be palatable so the pigs will consume it readily.



Table 1. Composition of starters

	Diet number							
	1	2	3	4	5	6	7	8
Protein level, percentage of diet	18	20	18	20	18	20	18	18
Ingredient, pounds*								
Finely ground yellow corn	1,430	1,332	894	792	1,190	1,080	1,328	1,410
Soybean meal, 48.5 percent protein	510	610	450	552	310	420	370	340
Rolled oats	—	—	400	400	—	—	—	—
Sugar (sucrose)	—	—	200	200	200	200	—	—
Dried skim milk	—	—	—	—	200	200	—	200
Dried whey	—	—	—	—	—	—	200	—
Fish meal	—	—	—	—	60	60	60	—
Dicalcium phosphate	26	26	26	26	14	14	14	20
Ground limestone	24	22	20	20	16	16	18	20
Trace mineralized salt†	10	10	10	10	10	10	10	10
Vitamin-antibiotic premix‡	+	+	+	+	+	+	+	+

* Air-dry feed.

† Be certain to provide 70-100 p.p.m. supplemental zinc in the complete diet.

‡ Should provide the following per ton of starter: vitamin A, 4,000,000 I.U.; vitamin D, 400,000 I.U.; vitamin E, 20,000 I.U.; riboflavin, 3 gm.; niacin, 24 gm.; calcium pantothenate, 12 gm.; vitamin B₁₂, 16 mg. An antibiotic or antibiotic-drug preparation should be included at the recommended (approved) levels.

PIG STARTERS FOR PIGS WEANED AT AN EARLY AGE

The following discussion provides swine producers with examples of several pig starters (table 1) that can be fed to pigs weaned at 12 to 15 pounds. It points out that a simplified starter consisting of only corn, soybean meal, minerals, vitamins, and antibiotics (diets 1 and 2) is adequate. All of the examples have been tested by the Department of Animal Science over the past few years and have been shown to support satisfactory rate and efficiency of gain of pigs from 3 to 8-9 weeks old.

Producers often feed a prestarter containing 20 to 22 percent protein from the time the pig is 1 week old until it is about 21 days old. But prestarters are generally expensive and in most cases the very young pig consumes only a small quantity, if any, during this period. In several Minnesota studies, pigs weaned at 3 weeks were fed no prestarter. Instead, sows were fed in their pens or stalls during lactation and the pigs had access to the sows' diet. Although the pigs ate only a small amount of feed, they consumed enough so they learned to eat prior to weaning. Pigs managed in this manner appeared to suffer no more than the normal amount of shock from weaning and generally began eating the assigned starters without delay.

All the pig starters shown in table 1 are formulated to contain 18 or 20 percent protein, 0.8 percent calcium, and 0.6 percent phosphorus. These levels meet the recommended requirements for pigs weighing 12 to 45 pounds. University of Minnesota tests conducted in the 1960's and involving corn-soybean meal diets containing 16, 18, 20, or 22 percent protein demonstrated that daily gain of pigs weaned at 3 weeks was unaffected by protein level. The most efficient gains

resulted when starters contained at least 18 percent protein. However, results of Minnesota studies conducted in the 1970's indicated that a 20 percent protein corn-soybean meal starter was necessary to maximize rate and efficiency of gain. The pigs fed in the later studies appeared to be quite muscular. They originated from a breeding program where above average tested boars had been used for several generations. Offspring from similar matings had also produced lean and very heavily muscled carcasses. If lean and muscular pigs do require a higher dietary protein level to maximize performance, then this might be an explanation for the difference in results between the experiments.

Actually, a producer should be concerned with supplying the pig with enough of the essential amino acids rather than just a given amount of protein. Soybean meal, a feed ingredient used in all the example starters, is an excellent source of supplemental protein. When adequately used to supplement cereal grains, it has the capacity of supplying essential amino acids to correct deficiencies in cereal grains. As demonstrated in table 2, the simplified corn-soybean meal starter (diet 1) meets the amino acid needs of the young pig with the exception of methionine (+ cystine). However, supplementing similar diets with methionine has not resulted in improved rate and efficiency of gain.

When the starters of the composition shown in table 1 were tested under *excellent management conditions*, the simplified corn-soybean meal starters (diets 1 and 2) supported rate and efficiency of gain equal to, or nearly equal to, the other diets. In all cases, however, *cost per pound of gain was less when pigs were fed the simplified starters*. Also, rate and efficiency of gain after pigs reached 8 weeks were unaffected by the starter fed prior to 8 to 9 weeks, and carcass leanness was not influenced.

Table 2. Comparison of amino acid content of a simplified starter (diet 1) to that of the requirement for pigs weaned at 3 weeks of age and until 50 pounds

Essential amino acids	Calculated amino acid content of diet 1	Total requirement
	- - - percentage of diet - - -	
Arginine	1.10	.32
Histidine . . . . .	.40	.29
Isoleucine . . . . .	.98	.67
Leucine	1.54	.79
Methionine + cystine . . . .	.45	.63
Phenylalanine + tyrosine .	1.46	.69
Threonine . . . . .	.72	.57
Tryptophan . . . . .	.24	.16
Valine . . . . .	.84	.58
Lysine . . . . .	.87	.83

Factors to Consider

Palatability. An important characteristic of any starter is that it be acceptable so pigs will consume it readily. For this reason, such ingredients as rolled oats, sugar, or fat often are added to pig starters. Since these ingredients usually cost three to eight times as much as yellow corn, their use must be justified by substantial improvements in efficiency of gain during the growing period prior to 45 to 50 pounds.

Milk byproducts such as dried whey and dried skim milk are commonly used in pig starters. Dried skim milk not only improves the acceptability of a starter, but contributes to the quality of the protein as well. Dried whey contributes limited protein of high quality and improves acceptability. Both are excellent sources of most B vitamins. These feed ingredients also are costly compared with corn or soybean meal, and improved efficiency of gain should be apparent to justify their use.

Antibiotics. Effective antibiotics have been of particular benefit in diets for young pigs. Generally, antibiotics increase the rate of gain and may result in less feed required per pound of gain. Their addition to pig starters also appears to help control certain types of nonspecific enteritis (scours). Differences in management and level of subclinical disease may influence the effectiveness of antibiotics. Usually, the higher the subclinical disease level, the greater is the improvement in rate and efficiency of gain due to including an antibiotic in the starter. Under certain conditions, a combination of antibiotics or a combination of an antibiotic and other bacteriostatic compounds may be more effective than a single antibiotic. *When including antibiotics in the diet, follow recommended use levels.* Of course, pigs must consume the starter to benefit from its antibiotic and drug content.

Pelleting. Pelleting starter diets may improve feed conversion efficiency. This improvement, however, has not always been consistent. At any rate, you must consider the cost of pelleting against the slightly higher feed requirement per pound of gain with unpelleted feed when deciding which form of diet to feed. Pelleting also has the advantage of appearing to reduce wastage.

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