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Problems of Intensified Swine Production

YOU, AS VETERINARIANS working with swine products, are aware of the specialization that is coming to swine production. We have seen this trend become a reality in broiler, turkey, and egg production. In some areas it has developed in beef cattle fattening. It has been developing in swine production for many years. In the past few years, however, this trend has been progressing at an increasing rate.

Much of this specialization is due to a more business-like approach being taken in hog production. More thought is being given to hog production as a business; not merely as means to market the corn or milo that is produced on a farm. More attention is being paid to how the swine enterprise contributes to the income, labor and investment requirements; and profit of the farm operation. The specialized hog producer must be a business man. He is looking for those practices that will enable him to utilize his labor and capital more efficiently and provide an adequate return from the production of pork.

Some of the practices that are associated with intensified swine production are confinement rearing, multiple farrowing, feeder pig production and feeding, and early weaning. The increased use of mixed rations rather than free-choice feeding of grain and supplement is also associated with this trend to specialization or larger production units.

First, let's consider some of the reasons for these practices and then any special problems that appear to be associated with them.

MULTIPLE FARROWING

Multiple farrowing, that is, farrowing more than two times per year is becoming a general practice with the more specialized producers. This trend has been developing quite rapidly judging from the shifts that we are seeing in farrowing and marketing cycles. There are several reasons for this trend.

1. Multiple farrowing makes more efficient use of farrowing facilities and equipment than does a single or two-litter

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per year system. Farrowing throughout the year makes more efficient use of the centralized farrowing facilities. Centralized farrowing facilities appeal to hog producers as they reduce labor and make easier the job of producing pigs.

A $10,000 farrowing barn used to produce 25 litters of pigs twice each year will take care of 50 litters or about 400 pigs. If 25 litters are farrowed four times per year, or 100 litters, 800 pigs are raised with the same investment in farrowing equipment. Six times per year farrowing further spreads the investment cost per litter or per pig.

2. Multiple farrowing properly organized makes more efficient use of labor in producing pigs. Labor requirements for the breeding herd are normally greater than for growing-finishing pigs. More and more hog producers are trying to streamline this part of their operation by using centralized facilities and labor-saving equipment. Such equipment must be used throughout the year to keep costs down.

3. Multiple farrowing means multiple marketing. Hogs are sold throughout the year providing a more uniform income. Hog price fluctuations are balanced out and income is available throughout the year to pay the bills.

4. Multiple farrowing also aids the packing industry by providing a more uniform supply of hogs throughout the year. This allows more efficient use of processing labor and equipment. Costly cold storage is reduced with the net result being greater efficiency in the process of getting pork from producer to consumer. This is also important to the producer as it will help make pork more competitive by reducing processing costs as well as stabilizing pork prices at the meat counter.

PROBLEMS ASSOCIATED WITH MULTIPLE FARROWING

The major problem associated with multiple farrowing is controlling "disease breaks." The main factor associated with the control of this problem is proper scheduling. Hog producers desire to use their facilities to the maximum. This results in pigs being farrowed continuously with constant exposure to new susceptible animals. Proper breaks in the farrowing cycle must be provided in order that the facilities may be thoroughly cleaned and disinfected between each group of litters farrowed. Our experience has indicated that with sound planning providing for such breaks in the farrowings, coupled with thorough cleaning, a centralized farrowing facility can be utilized to a maximum and still avoid serious disease problems.

I would recommend that hog producers starting into a multiple farrowing program start out on an every-three-months or four-times-per-year basis and then expand as their experience and success indicates.

CONFINEMENT REARING

There is very active interest today in the feeding of hogs for market in confinement on concrete as opposed to the use of pasture. There are several factors that are contributing toward this interest.

1. Nutritional knowledge has developed to the point where rations can, and are being formulated that are not improved by pasture.

2. Increasing land values and reduced feed saving advantages are resulting in a very low return per acre for pasture used for hogs.

3. Increased use of multiple farrowing is changing the requirements for production facilities.

4. Advances in sanitation procedures, plus improved disease and parasite control methods, are making centralized facilities practical.

5. The "convenience factor" found in centralized facilities is appealing.

Several years ago it was common for good legume pastures to reduce feed requirements for gain by nine to ten percent. Our own research during that period showed rather consistently nine percent less feed was required to produce gain on good ladino clover-alfalfa pasture than in drylot. More recent tests have failed to show such advantages when properly balanced rations were fed.
The 1958 University of Illinois Swine Day Report summarized four drylot and pasture feeding comparisons as follows:

**Table 1.**
**SUMMARY OF DRYLOT VS. PASTURE FOR GROWING PIGS FED COMPLETE RATIONS IN ILLINOIS EXPERIMENTS**

<table>
<thead>
<tr>
<th></th>
<th>Drylot</th>
<th>Pasture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed per pound of gain, lbs.</td>
<td>3.04</td>
<td>2.99</td>
</tr>
<tr>
<td>Average daily gain, lbs.</td>
<td>1.41</td>
<td>1.39</td>
</tr>
<tr>
<td>Feed cost per cwt. gain (1)</td>
<td>9.06</td>
<td>8.89</td>
</tr>
</tbody>
</table>

(1) Feed cost figures represent only ingredient costs for the feeding period plus a 20 cents per cwt. charge for grinding and mixing. A charge for pasture is not included.

The Illinois workers concluded that:
1. Gains were practically the same for pasture or drylot;
2. Pasture pigs required about the same amount of feed per pound of gain as did the drylot pigs;
3. The feed saving value per acre of pasture was only $4.50 to $9.00 per acre.

Results from several other experiment stations have shown similar results. It is evident that today's modern, well balanced ration is improved little by feeding it on pasture. Where a more profitable alternative use of the land normally used for hog pasture is available, the modern hog producer is turning toward confinement production of pork.

Multiple farrowing is also contributing to further interest in confinement feeding. With pigs being produced throughout the year, emphasis is placed on the convenience in care, feeding and watering. Proper confinement feeding layouts require a minimum of labor for feeding and watering. Also through multiple farrowing, confined feeding units are used at capacity throughout the year which reduces the investment per animal marketed in such a system.

The convenience of properly designed confinement systems is appealing to hog producers. Caring for hogs in mid-winter when feed and water must be hauled is not a pleasant task. How much this convenience is worth in dollars and cents is hard to assess but it does appeal to volume hog producers.

The major problem of confinement hog production is one of a simple manure disposal system. Properly designed feeding layouts that require a minimum of labor in cleaning through the use of such devices as sloping floors, barn cleaners, mechanical scrapers, septic tanks, and liquid manure systems are being used to solve this problem.

The initial capital investment in changing over to such a system is also a deterrent. However, many existing facilities can be modified and relatively low cost structures can be built particularly for the growing-finishing phase.

Other conditions we occasionally hear referred to as problems of confinement rearing are cannibalism, sore feet, and respiratory infections.

Our experience clearly indicates that tail-biting, or ear-chewing are brought on by overcrowding or poor management. Cold, damp sleeping areas cause pigs to pile up and become irritable. Pigs fighting get a taste of blood and this cannibalistic nature develops. Usually it is one pig in a group that is the culprit. Removing him frequently stops the biting. Correcting the cause, however, is most important.

Lameness or sore feet are frequently blamed on the use of concrete floors. We have raised several thousand hogs on concrete from birth to market with no indication of lameness or stiffness. Most frequently when this condition occurs, pigs that have been raised on pasture or dirt lots are put on concrete floors as feeder pigs. Their feet are somewhat soft and some lameness may occur. Improper rations may lead to some leg weakness. This should not lead one to the conclusion, however, that heavy mineral fortification should be followed when feeding on concrete. Adequate levels of minerals should be fed to meet the pigs requirements, but excesses should be avoided.

Respiratory problems can be prevented by properly designed facilities and good management to prevent drafts and eliminate dampness.

A properly designed and operated confinement system allows the operator much more control over his operation and will provide for better disease and para-
site control than will be achieved under pasture or dirt lot conditions.

**HANDLING FEEDER PIGS**

A large share of the corn belt hog producers would prefer to purchase feeder pigs to put into their feed lots rather than raise their own. This would reduce their requirement for labor in their hog raising operation, which is in competition with their farming operation. The major problem has been a consistent supply of uniform, healthy pigs at prices that are equitable for the feeder, as well as the pig producer. As more momentum is gained in meat type hog production another problem will also be important. The feeder pig producer is separated from the marketing of the finished product and will therefore be less sensitive to the specific demands for quality and proper type. Of course, a producer of feeder pigs having poor meat type characteristics will eventually find it reflected in the demand for his pigs. However, an extra step is required to bring him face to face with the economic need for improved quality in his breeding stock.

Frequently, feeder pig purchasers have trouble with pigs when they are brought into their feed lots. This is not surprising as the pigs are subjected to considerable stress as they are assembled and transported to the feeder. They come into contact with diseases that they may not have built any resistance to from their previous environment. Consequently, when they arrive in a weakened condition, disease outbreaks frequently occur.

The use of a stress feeding program, as well as proper management at this time, can help prevent these troubles. When the pigs are brought to the farm, they should be kept away from other hogs and placed in a clean, comfortable, confined area and fed a light ration carrying at least 100 grams of antibiotic per ton. This will help carry them over this stress period. Provide plenty of fresh water and comfortable quarters free from drafts. Don’t make them fight strange pigs for something to eat or drink. After seven to ten days, they may be placed on the regular feeding program.

Feeder pig producers can improve their status considerably by providing thrifty feeder pigs that have been castrated early (by two weeks of age), vaccinated, weaned and on feed before being sold as feeders. A pig weaned and sold as a feeder the same day, or within just a few days, undergoes a double shock.

The use of quality breeding stock that will produce pigs of good doing ability and high carcass yields will strengthen the position of feeder pig producers. If feeders cannot get the type, quality, or thriftiness in pigs they require, they will raise them themselves.

Feeder pig production will increase. Much of it will tend to occur in areas with relatively low land values and surplus labor such as is found in many of the fringe areas in the corn belt. We are already seeing a considerable development in feeder pig production in areas of Wisconsin, southern Missouri, and other areas bordering the great corn belt.

The major problem feeder pig producers have is in disease control in their young pigs. Of course they must also prevent such problems as contagious abortion and leptospirosis from destroying their pig crop through abortions. Blood testing and vaccination provide a good means of controlling these problems.

Feeder pig producers usually are on multiple farrowing programs. The same principles that apply to those operations also apply in feeder pig production.

**EARLY WEANING**

With increased specialization in pig production, interest in weaning pigs prior to the traditional eight weeks has increased. Weaning at five or six weeks of age is feasible for most hog producers who are following a sound pig starting program and have at least average hog production facilities. Weaning at earlier ages, however, requires more specialized facilities, equipment, and management, as well as excellent rations.

At this time there appears to be no advantage in weaning earlier than three weeks of age or at minimum weights of 10 to 12 pounds.

Why are specialized producers inter-
ested in weaning at approximately three weeks of age? We have been weaning all of our pigs at three weeks of age for four years. Our results indicate these possible advantage from this practice.

Our results show pigs weaned at three weeks of age will be heavier at ten weeks than pigs weaned at five to eight weeks. Less labor is required when using centralized production facilities as the sow must no longer be cared for after three weeks. Feed costs of gain is less by approximately one-half cent per pound. Sows may be bred back within 25-28 days following farrowing then produce two and one half litter per year. Space requirements are less in the centralized farrowing facility when pigs are weaned at three weeks. Highly specialized farrowing barns may be set up and sows may be kept in farrowing crates until the pigs are weaned at three weeks. The pigs then can be placed in a nursery and the farrowing facility cleaned out and made ready for another farrowing. Better sanitation and disease control can be practiced in the farrowing barn under these conditions.

Early weaning requires special feeding and management procedures to be successful.

Pigs must be sized and kept in small groups. A maximum of 25 pigs per group with 15 being even better is recommended. The pens must be kept warm and dry and free of drafts. A three week old pig that is chilled will pile up and not eat. Heat must be provided until the pigs are eating well. Initial temperatures of 75° F. at weaning are recommended. This may be dropped to about 60-65° within ten days to two weeks.

Ten to twelve pound pigs require excellent rations. Such rations must be based on milk products for palatability and digestibility by the pig. Pelleting of such rations reduces waste and improved feed conversion.

Adequate amounts of clean water should be provided. Water should be close to the feed. Provide one foot of water space for each 10-12 pigs. One foot of feeder space should also be provided for each six pigs. Approximately six square feet of pen area should be provided for each pig weaned at three weeks and carried in a nursery unit until 40 to 50 pounds in weight.

Sanitation and disease control procedures must be religiously followed to keep levels of infection low. If a sound program of thorough cleaning and disinfecting between each group of pigs raised in a nursery unit is set up and followed, disease can be prevented and the operations will be very successful.

In intensified swine production, emphasis must be placed on sanitation and disease control. The effort must be placed on disease prevention practices and systems to keep infections out of the operations rather than treatment after it occurs. To this end, the feeder is dependent on the cooperation and help of the veterinarians in the field. It is to our benefit to make hog production a profitable and successful business carried out by independent hog producers. These successful producers are fee paying clients. We can help to make their business a successful one.

End

DUCK EMBRYOS RABIES VACCINE. The Journal of the American Veterinary Medical Association (168: 1771) reports on a new vaccine against rabies. It is a sterile, freeze-dried suspension of killed rabies virus prepared from whole duck embryo infected with the virus, chemically inactivated and preserved with one part per ten thousand thimerosol.

It is used prophylactically for active immunization against rabies, usually during the incubation period after exposure, and its immunizing capacity compares favorably with that of older vaccines. It is prepared by Eli Lilly and Company as a freeze-dried powder to be diluted in distilled water and administered subcutaneously. Marked side effects to the injections were absent but the process was described as unpleasant.

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