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SWINE PRODUCTION

▪ ROUTINE CARE AND MANAGEMENT

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SWINE PRODUCTION

■ ROUTINE CARE AND MANAGEMENT


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NOTE TO READERS

The attention of readers is drawn to the fact that the text for this publication was prepared by the Saskatchewan Advisory Committee on Swine Production and that where recommendations for pesticide use appear, they are consistent with those of that province. However, readers who reside in other provinces should check with provincial authorities to determine whether or not the recommendations apply in their province.

CONTENTS

The Sow and Litter	7
Management Before Farrowing	7
Preparation of Farrowing Area	7
The Sow	7
Management at Farrowing	7
The Litter	7
The Sow	9
Management From Farrowing to Weaning	9
Requirement for Iron	9
Castration	10
Creep Feeding	10
Water	10
Feeding the Sow	10
Management at Weaning	10
Age at Weaning	10
Weight at Weaning	11
Management after Weaning	11
The Growing and Finishing Pigs	11
Grouping of Pigs	11
Sanitation	12
Parasites	12
Cannibalism	13
Water	13
Marketing at Correct Weights	13
Management of Replacement Gilts	14
Breeding	14
Flushing	14
Housing	14
The Brood Sow	15
Breeding	15
Use of Pasture	15
Exercise	15
Parasite Control	16
The Boar	16
Housing	16
Nutrition	16
Breeding	16
Artificial Insemination (A.I.)	17
Routine Care	17
Management of Purchased Boars	17

THE SOW AND LITTER

Mortality in pigs is highest during the first few weeks of life. Adequate precautions must be taken to ensure that farrowing facilities are suitable and that losses from crushing, disease and stress are kept to a minimum.

Management before farrowing

Preparation of farrowing area – The crates, or pens, should be located in an area separate from that occupied by other animals. The sow prefers a temperature of 60-65°F but, since newborn pigs require a temperature of 75-85°F (or even higher for the first few days), some form of supplementary heat is usually necessary. Either heated floors or heat lamps are suitable. The ventilation system should be designed to prevent excessive humidity in the farrowing barn.

New-born pigs have limited resistance to disease. Therefore, the farrowing area must be cleaned and disinfected before the sow is installed. The method adopted will depend on the equipment and labor available; however, the following routine is suggested:

- Remove loose bedding and manure.
- Soak the area with cold water to loosen residual dirt.
- Clean thoroughly using a high-pressure sprayer.
- Spray the entire room and equipment with a lye solution or other disinfectant.
- Allow to dry.

It is convenient at this time to check that accessory equipment such as water-bowls and heat lamps are functioning properly and that replacement parts are on hand.

The sow – Farrowing occurs approximately 114 days after breeding. To avoid unnecessary disturbance of the sow, she should be moved to the farrowing quarters approximately 1 week before the expected date. To prevent contamination of the farrowing area, the sow should first be washed to remove dirt which may contain disease-causing organisms.

Constipation may develop in some sows during confinement. This can generally be avoided by including from 5-10 percent of dried beet pulp in the ration. Up to 25 percent wheat bran has also been used, but it is less palatable than beet pulp and may result in the sow going off feed. Digestive disturbances should be avoided as the quality and quantity of milk may be reduced.

Management at farrowing

The operator should be present during farrowing so that assistance may be given, if required. This is especially important for first-litter sows. When farrowing crates are used, the newborn pigs are easily accessible without disturbing the sow.

The litter – Newborn pigs normally have no difficulty in breathing. Occasionally, the snout may be covered by fetal tissues which should be removed with a clean cloth. On rare occasions, the heart may stop beating during birth and the piglet may appear dead. External massage may stimulate heartbeat but to be successful it must be applied as soon as possible.



Sows approaching the end of the gestation period should be in medium fleshing. Specialized swine operations usually restrict feed for pregnant sows and increase the daily allowance after farrowing according to lactation demands. This high quality Landrace sow is in top show condition, carrying more fat than desirable for a commercial operation.

Under normal circumstances, the piglet has no difficulty freeing itself from attachment to the sow, and no attempt should be made to pull the umbilical cord free. In the case of small or weak piglets, the cord may be broken by squeezing between the fingers. To prevent entry of disease organisms, the attached cord should be dipped in tincture of iodine.

The colostrum, or first milk, produced by the sow contains important antibodies that give temporary protection against diseases. These antibodies can be absorbed only during the first few hours of life and it is essential that each piglet receives its share of colostrum soon after birth. If necessary, small or weak pigs should be helped to suckle.

At birth, pigs normally have four pairs of temporary tusks, also called black or needle teeth, which can cause irritation to the sow during suckling. As they may also injure the other piglets, these teeth should be clipped off using side-cutting tooth nippers. Avoid cutting the gum.

As some pigs in the litter may be retained for future breeding purposes, it is convenient to identify each by ear notching soon after birth. Litter weights taken at birth and at weaning will provide information on the productivity of the sow.

If there are too many pigs in the litter for the sow to nourish, or if the sow is unable or unwilling to nurse, it may be possible to use another sow as a foster mother; she should be at approximately the same stage of lactation. A sow tends to reject newcomers unless they cannot be distinguished from her own litter. This problem may be overcome by mixing the additional piglets with the litter and spraying them all with a mild creolin solution.



Farrowing stalls are popular in modern farrowing barns. They provide good control of the sow and piglets and aid considerably in disease control.

Several factors can affect the sow's milk production. When milk is lacking, it is wise to consult a veterinarian immediately. If the condition persists, it may be necessary to provide a substitute supply. Commercial milk replacers are available but artificial feeding of very young pigs is often time consuming and not very successful unless high standards of management are maintained.

The sow – Feed intake of the sow should be restricted during the first few days after farrowing to avoid digestive disturbances. Some sows will normally reduce their feed intake just before and after farrowing. A plentiful supply of clean, fresh water should be provided at all times.

Management from farrowing to weaning

While sows' milk is an ideal food, suckling pigs should be encouraged to eat supplementary feed. This feed should be placed in an area inaccessible to the sow.

Requirement for iron – Pigs are born with a limited supply of iron which is rapidly depleted as they grow. Milk contains a negligible amount of iron and it is necessary to supply piglets with an additional source to prevent anemia. Iron-dextran injections, given when piglets are 3 to 4 days of age, are effective, provided manufacturer's recommendations are followed. A 2 cc injection (supplying 200 mg of iron) has been the recommended dose. Smaller amounts have been suggested

but it is uncertain whether they are as effective. Iron supplements given orally in paste or powder form, are cheaper but must involve repeat treatments and are more time consuming.

Castration – The growth of boars to market weight is generally more efficient and rapid than that of castrated males or gilts. In the future, marketing of young boars for pork may become an accepted practice but at present, it is necessary to castrate male pigs that are not required for future breeding. For ease of handling and reduced stress, castration should be done at least 1 week before weaning. An acceptable time is when the pig is 2 to 3 weeks old.

A sharp knife, or scalpel, and disinfectant solution are required. The incisions should be low enough to permit drainage from the scrotum. Castration of ridglings and pigs with scrotal ruptures requires more care and is best performed by an experienced operator or a veterinarian.

Creep-feeding – Pigs may show an interest in supplementary feed at 1 week of age. To encourage consumption, the ration should be palatable and easily digested. Creep rations often contain a large proportion of expensive ingredients. Although the cost per pound of ration is high, the young pig is able to efficiently convert such rations into body tissue and the added expense is more than justified.

Small amounts of fresh ration should be offered initially as soiled or stale feed will tend to discourage consumption. Most creep rations contain antibiotics or drugs, which provide some disease protection.

Water – A source of fresh water should be available for the young pigs. It is important that they become accustomed to drinking water before they are weaned.

Feeding the sow – Feed consumed by the sow is used to provide nourishment for the litter and to replenish tissues depleted during pregnancy and lactation. Allowing the sow to eat to appetite is a practical method but may result in excessive feed consumption. Alternatively, she can be fed according to a scale based on the litter size. It is advisable to regulate the amount of feed according to the condition of the sow so that neither excessive gain or loss of body weight occurs.

Management at weaning

To reduce stress on the litter, the only change at weaning should be the removal of the sow. Moving the litter or mixing with other pigs should be avoided for several days following weaning.

Age at weaning – Several factors should be kept in mind when deciding at what age pigs should be weaned. Advantages of earlier weaning include the opportunity to increase the number of litters produced annually by earlier rebreeding. Short lactations reduce the demands on the sow and the amount of sow feed required. Disadvantages include the provision of higher cost starter rations and the higher level of management necessary to reduce the incidence of disease.

Weaning during the first week after farrowing has been accomplished but is impractical under most normal farm conditions. Presently, the usual weaning age is from 3 to 6 weeks. After the third week of lactation the quantity of milk produced by the sow normally tends to be insufficient to meet all the requirements for maximum growth. The extra nourishment can be supplied by supplementary feeds

and, provided the pigs are accustomed to this, there ought to be a minimum setback at weaning.

Weight at weaning – Pigs that are heavier at birth will usually be more vigorous and tend to be the heaviest of the litter at weaning. Because both the litter size and milk production of each sow varies, the decision when to wean should take into account weight rather than age of the young pigs. Under farm conditions, pigs should weigh at least 10 pounds before being weaned. Generally, the lightest pigs are more susceptible to disease after weaning.

Management after weaning

A major problem often observed soon after weaning is a rise in the incidence of scours (post-weaning diarrhea) in young pigs. In severe cases, death will result and several or all pigs in a litter may be lost. Loss of body water (dehydration) is an important factor contributing to death and, consequently, clean water must be available.

Factors contributing to growth of disease-causing organisms must be minimized. Dirty conditions and excessively warm and damp surroundings contribute to the incidence and spread of disease. Caution should be taken to ensure that disease is not spread to pens containing healthy animals by direct contact or on footwear or equipment.

Restricted feeding during the first week, rather than self-feeding, has, in some cases, prevented scours from occurring. Rations containing high levels of medication are commonly used as a preventive measure. For curative purposes, medication of the drinking water is preferred as sick pigs tend to go off feed.

Reducing the sows intake at weaning will hasten the drying-off period. If sows are run together, allow a few days isolation of the weaned sow to reduce the risk of udder damage when she is returned to the group.

THE GROWING AND FINISHING PIGS

The death losses among growing and finishing pigs (50 pounds to market weight) are low. If a good feeding, management and sanitation program is followed, little trouble should be encountered during this period.

Grouping of pigs

Pigs should be grouped in lots that are uniform in size, sex and general health. When grouping or mixing different lots of pigs, attempt to keep fighting and the resultant stress to a minimum. The following procedures may help:

- Mix groups of pigs in a pen new to both groups.
- Spray pigs with a strong-smelling compound, such as cresol disinfectant, which will help to mask odor differences.
- Avoid adding one or two pigs to a larger group.

Barrows and gilts should be fed separately. Barrows grow faster, go to market sooner and tend to have poorer carcass quality than gilts. Feed restriction during

the finishing period may be economically justified for barrows but it is seldom justified for market gilts.

Recommendations as to minimum floor area have been made for pigs; however, within these recommendations the optimum number of pigs per group has not been established. Trials have been conducted to measure the effect of number of pigs per group upon behavior and performance. Numbers ranged from 7 to 45 for growing pigs and from 4 to 21 for finishing pigs. Results were inconsistent from season to season. High temperatures seem to cause more stress in large groups than in small groups. In tests conducted simultaneously in three different buildings, results showed that from 35 to 100 pounds, 16-pig groups consumed less feed and gained slower than 8- to 12-pig groups. From 100 to 200 pounds, voluntary feed intake was less with the larger groups but growth rates were similar.

Pen size will dictate the number of pigs carried per group. Pens for groups numbering about 12 pigs have an advantage in terms of performance. The extra cost of construction of smaller pens must be weighed against possible benefits from improved performance.

Younger pigs generally benefit from being kept in smaller groups since they are affected to a great extent by stress, caused by competition and social order adjustment, that occur in large groups.

Sanitation

Pens should be thoroughly cleaned and disinfected between groups of pigs. A thorough cleaning such as is done with a high pressure (500-600 psi) sprayer should be carried out followed by a disinfectant spray.

In a feeder operation where animals are being purchased from different sources, serious consideration should be given to having isolation quarters for the first 2 to 3 weeks to minimize the possibility of introducing and spreading serious diseases.

Parasites

Treat pigs for intestinal roundworms (ascarids) shortly after weaning. To effectively control this parasite it is necessary to know something of its life cycle and the damage it does.

The adult worms, living in the intestine, lay numerous eggs, which pass out in the manure, contaminating equipment, feed, soil and pasture. When these eggs are swallowed by animals while feeding, they hatch into larval worms which migrate through the lungs and liver causing extensive damage (coughing and increased susceptibility to pneumonia) before they become established in the intestine as adult worms. There, the adult worm causes irritation and damage to the intestinal wall, often resulting in enteritis and unthriftiness.

Piperazine and hygromycin are the most common treatments for round worms in swine. Hygromycin is fed in starter and growing rations and is effective in reducing ascarid egg production. It is generally not fed after pigs reach 90-100 pounds.

Piperazine is a worm expeller and is effective against ascarids and most nodular worms. It has the advantage of being very safe and only gross overdoses can produce poisoning. Since the ascarids require 60 days to mature and start egg

laying, the swine producer can control and eliminate worms by treating pigs every 50 days after birth.

Both mange and lice can be controlled by toxaphene and malathion. Complete coverage of the body is necessary.

Cannibalism

Bare floors, overcrowding, not enough feeders or water space, poor ventilation and poor traffic flow throughout the pen create 'stress situations'. Stress is often what causes tail biting in otherwise healthy swine herds. When it is first noticed, the removal or ringing of the pig or pigs that are doing the biting may stop the trouble. If it continues and the cause of stress isn't corrected, tail biting spreads and ends up as a case of cannibalism.

Pigs with infected tails gain slowly. The infection can go up the spinal cord and cause paralysis and death.

Turning the pigs out is the only remedy if a bad case of cannibalism develops. Pigs that have their tails chewed should be removed, given a daily injection of antibiotics for 3 days, and have the tail stump treated with tincture of iodine.

Old tires, chains hung from the ceiling, logs and paint cans with loose stone inside have been tried as a means of reducing boredom and so reduce the incidence of tail biting. Sometimes an abrupt change in ration, such as adding up to 2 percent salt for 1 or 2 days, may stop tail biting.

The most promising method of reducing the problem is to dock all the pigs tails. The tail can be removed about 1/4 inch from the body when the pig is a few hours old. Docking sometimes won't be the final solution however, since the pigs may simply start chewing ears.

Water

A constant supply of clean, fresh water should be available to the pigs. Allow one automatic watering cup per 20 to 25 pigs. Water high in minerals may prove harmful to pigs and such water should be analyzed for salt content. The water source should be suspected when a problem arises that is not readily diagnosed.

Growing and finishing pigs normally consume about 2 1/2 pounds of water per pound of feed consumed or, on the average, about 1 gallon of water per pig per day if given free access to water. A number of studies have shown that over-restriction of water, or the incorporation of excess water in the feed, will reduce feed consumption and growth rate.

Restriction of water to 1.25 pounds per pound of feed in feeding trials has resulted in reduced rate of gain, a reduction in efficiency of feed utilization as well as significantly increasing carcass fat in some cases. High temperatures and low humidities increase problems associated with water restriction.

Marketing at Correct Weights

Swine producers lose thousands of dollars each year by marketing pigs at wrong weights. The new grading system which came into effect in 1969 allows carcasses to

go to 180 pounds before downgrading them for being too heavy. This would allow producers to carry hogs to as high as 235 pounds live weight. Hogs have a tendency to begin to lay down fat at an increasing rate in proportion to lean, as they approach 200 pounds and this results in proportionally fatter carcasses as well as poorer feed conversion. Most producers find that the preferred shipping weight is probably in the 200-210 pound range.

A scale to weigh market hogs is a valuable piece of equipment and should pay for itself in the increased profits gained by marketing pigs at correct weights.

Management of Replacement Gilts

Replacement gilts should be selected and separated from other finishing pigs by the time they reach 180 pounds. At this time they should be fed a dry-sow ration at a level that will provide 1 to 1 1/4 pounds of gain per day until about 8 months of age. This type of feeding program will allow for satisfactory development but prevent excessive fattening.

Breeding

It is not advisable to breed gilts the first time they show a heat period. Since the number of ova released from the ovary increases by one or two each cycle, delaying breeding to the third or later cycles will help to insure satisfactory litter size. To delay breeding until the third heat cycle and still have gilts farrowing by 1 year of age means that they must reach puberty by about 6 months of age. The majority of gilts reach puberty at between 6 and 8 months of age.

Flushing

'Flushing', or increasing energy intake of gilts for about 2 weeks before breeding, is of questionable value for increasing ovulation. Recent research results indicate that 'flushed gilts' have a high mortality of embryos so that the potential advantage of increasing ovulation is lost. In view of these results any extra work and feed involved in flushing must be carefully weighed against the possible benefits.

Housing

There is some evidence (from practical experience and documented research) indicating that strict confinement of replacement gilts by tethering or housing in small pens may retard sexual development as well as reduce the intensity of estrus expression. The resulting delay in reaching puberty and problems with 'shy breeders' can seriously affect planned breeding programs. Moving replacement gilts to outside housing pens and colony houses, or at least regrouping them in pens different from the ones they have been raised in, may help prevent such problems.

A change in housing in conjunction with the introduction of a boar into a group of problem gilts that have not been cycling, will often precipitate cycling in a short time.

THE BROOD SOW

Breeding

Sows that are not excessively thin and rundown should be rebred at their first heat period which occurs a few days after weaning. The two possible exceptions to this rule are:

- 1 Disruption of a predetermined farrowing schedule.
- 2 Weaning sows at 3 weeks or less.

In the latter case, breeding should be delayed until 2 weeks after weaning. This will result in much better conception at first service (70-75 percent as compared with 30-35 percent when sows are grouped and pen bred immediately after weaning) as well as an increase in litter size by about 1 1/2 pigs per litter.

To make the maximum use of the boar, and to obtain accurate records of breeding dates, controlled individual matings is recommended. If sufficient 'boar power' is available, breed each sow twice during the heat period, 12 to 24 hours apart. Breeding twice can increase conception rate by 10 percent and litter size by about one pig per litter. If a single service is to be used, breed around the middle of the heat period.

Use of Pasture

Although many specialized swine operations find pasturing sows during the summer impractical, it is a recommended practice for smaller, less intensive operations. Pregnant sows thrive on good quality pasture with only minor supplementation with a good ration.

Exercise

Exercise for the bred sow is not necessary, as good success has been experienced with sows totally confined in small pens, or tied, during the entire gestation period. However, exercise is of some value in maintaining good muscle tone and may help in reducing the incidence of lameness.

A comparison of tie stall operations with more conventional outside group housing for brood sows at a U.S. university gave the following results:

- 1 Similar litter size at birth with a slight advantage for the group housing.
- 2 Reduced culling rate for sows in tie stalls (18 percent vs national average of 33 percent).
- 3 Frequent adjustment or treatment of sores from incorrectly adjusted thethers add to the labor load for the tie stall system.
- 4 Increased breeding problems and poorer conception in the tie stall operation, due mainly to problems in heat detection.

One can conclude that the advantages claimed for total confinement of sows must be the result of top level management.

Parasite Control

Sows in a pasture system should be treated for worms on a regular basis before going out to pasture so that worm infestation in the ground is kept to a minimum.

If sows should become infested with lice and/or mange, the sows and their sleeping quarters should be sprayed with toxaphene or malathion before the infestation becomes extensive.

THE BOAR

Boars represent half the genetics of a breeding herd and have considerable influence on future performance within a swine unit. Careful selection and management of boars is necessary to improve the profitability and productivity of any swine breeding enterprise.

Housing

Outside accommodation can be simple but should allow sufficient protection from very cold, hot or wet conditions and should have an adequate area for exercise. Extremes of temperature may adversely affect fertility. For example, at the University of Saskatchewan it was observed that exposing a boar to -10°F . for 6 days reduced the number of motile sperm per ejaculate for a subsequent period of about 2 months.

Wherever possible, the boar should be kept in a paddock alongside the sows. With bred sows for company he is less likely to become bad tempered and more inclined to take enough exercise.

Inside accommodation is also satisfactory but unless encouraged to exercise, the boar may become overweight and lazy.

Nutrition

Clean water should be available at all times. Boars housed outside should not be expected to rely on snow or ice as a source of water during the winter months.

Good pasture can supply a large proportion of the boars required nutrients but a suitable breeding ration should supplement this. The amount of ration will depend on the 'condition' of the boar and his frequency of use. Feeding too much is not only wasteful but may result in the boar becoming too heavy for all but the largest sows. Feeding too little will eventually reduce the boars capacity to breed successfully and may curtail his interest in mating. Hand-feeding allows a daily check to be made and the amount of ration can be adjusted accordingly.

Breeding

A boar may be used sparingly (4 services per week) when 8 months old and should not be subjected to more frequent use until 1 year of age. Mature boars in good condition can be used once daily for up to 4 weeks, between adequate rest periods, or twice daily for periods of 3 days followed by a day of rest. If many sows

have to be bred, maximum efficiency of one boar will be obtained by mating each sow only once, late on the first day of estrus. Breeding each sow on successive days can increase the percentage of sows settled and litter size but a greater number of boars will be required.

As a rule, boars should not run freely with the sows. Controlled breeding is more satisfactory as it is then possible to ensure that the boar enters correctly. A breeding crate is useful, especially when gilts are to be bred or boars have difficulty in mounting.

The first service of a young boar, or a boar not recently used, may involve 'stale' semen of low fertility. Breeding the first sow in a group on successive days could offset this to some extent.

The importance of breeding records should not be overlooked. Repeat breeders are quickly confirmed, facilities can be prepared according to expected farrowing times, and percentage of replacement stock can be determined.

Artificial insemination (A.I.) – The application of A.I. on a large scale is limited by the short time for which viable semen can be stored. Fresh semen should be used within 2 hours of collection although dilution with extenders can prolong the period to 2 days. Under farm conditions, A.I. is rarely practical. However, with new methods and knowledge, the use of A.I. is expected to increase.

Routine Care

When boars have access to outside pasture or drylot, routine deworming procedures should be conducted regularly using commercial compounds.

Careful attention should be paid to the condition of the boar's feet which may require trimming to prevent lameness from developing. Annual removal of the boars' tusks with bolt cutters can reduce the danger of serious injury to sows or personnel.

Management of Purchased Boars

Boars brought in to a herd should be isolated on arrival. Two or 3 weeks may be necessary to let the animal adjust to the new surroundings and lessen the chance of introducing any disease into the herd.

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