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Handling Hogs: Pork Industry Handbook

Michigan State University Extension Service

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pork industry handbook

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Handling Hogs

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Introduction

Gentle handling and good husbandry practices will improve swine productivity. A recent study has documented that on farms where sows showed little fear of humans, reproductive performance was high. On other farms, where sows were fearful of humans, reproductive performance was lower [1].

Outside of daily handling, most growing pigs are "worked" at discrete stages of production. These include, but are not limited to, processing at birth (see PIH-114), castration, weaning and moving to nursery, moving to growing building and finally moving to the finishing building (if a separate growing/finishing building is used) and shipping to market. Sows (and for the most part boars) are handled at breeding, pregnancy checking, vaccination, and weaning (See PIH fact sheets, 1, 74, and 89).

Handling Pigs

Pigs are handled for specific reasons, such as giving medication or redistributing into larger or different pens. Each time pigs are handled, the producer must ask if the benefits of handling exceed the possible performance setback. Animals accustomed to frequent, close, gentle contact with handlers are less likely to experience a production setback by nonpainful procedures such as weighing or being driven down the aisle. Painful procedures or rough handling are more likely to set pigs back. For maximum reproductive performance the person who manages breeding animals should not perform painful procedures on them.

Research has shown that people entering the finishing pens and walking the aisles once a week had no effect on weight gain, if the animals were handled gently [2,3]. The animals became accustomed to people in the pens and did not become excited. However, weight gains were lowered and stress hormone levels increased if a handler occasionally slapped or shocked the pigs with a prod [4]. Even

though the handler was gentle most of the time, the pigs probably became stressed when he entered their pen, because they feared a possible unpleasant experience.

Mixing and Fighting. When pigs first meet, they go through a period in which they establish social relationships. One pig dominates, and the others become subordinate. In a socially-stable pen, which is the desired environment, each pig has a stable social relationship with each other pig.

Establishment of the social order requires that some, but not all, pigs fight. Some pigs submit without a fight. When pigs fight, they do not eat. Even the pigs who submit without fighting do not eat very much while other pigs are fighting. This reduced feed intake reduces weight gain. Newly weaned pigs do not eat much anyway; therefore, fighting does not have measurable negative effects on their performance. Older growing pigs, however, are eating at a productive rate and any disruption in feeding (such as occurs when pigs fight) causes reduced weight gain. The older and heavier the pigs are, the more negative the effects of fighting (see Table 1) [5,6]. Larger pigs (especially over 150 lbs.) are very strong and can cause large wounds and extensive injuries. Mixing pigs over 150 lbs. should be avoided as much as possible. If many pigs gang

Table 1. Relative pig performance setback because of mixing pigs and fighting.

Weight at mixing	Weight gain depression	Added days to market	Other problems ^a
8-40	None measurable	0	Wounds
40-80	7 days	0	Wounds
80-150	28 days	0	Wounds and injury
over 150	28 days	7 or more	Wounds and injury

^aOther problems associated with social stress include tail-biting, ear-chewing, prolapsed rectum, abscesses, and increased disease.

up on one pig, it may be advisable to remove the one being picked on.

There are several procedures to reduce fighting among mixed pigs. The first rule-of-thumb is to minimize other stressors. When mixing pigs, avoid overcrowding, poor ventilation, sharp or broken equipment and do not mix when disease is obvious. Mix all the pigs at the same time in a strange new pen. Whenever possible, mix approximately equal numbers of pigs. Avoid adding a few new animals to a large established pen of pigs. The newcomers will be severely attacked. Avoid mixing pigs when the air temperature is above 90°F.

Providing regrouped pigs with areas to escape attack will reduce fighting. Small, fenceline, hide boxes which are just large enough for a pig's head and shoulders reduce aggression [6]. The use of masking odors is not recommended. They may increase fighting. However, boar odor reduces fighting among young pigs [5].

One product has been approved as an antifighting drug. Stresnil® (azaperone) reduces pig fighting through a mild tranquilizing effect. Pigs must be handled to inject the drug and they must be given the correct dose based on weight. Excessive dosages may cause drowsy pigs to pile up.

Attempting to create uniform-weight pens. Producers often attempt to sort pigs into pens with uniform weight penmates. If weaned pigs are put in pens with similar weight pigs, they remain fairly uniform throughout the nursery period [7]. Sorting pigs immediately after weaning into uniform weight groups is less stressful than mixing heavier pigs. Fighting soon after weaning has no long-term effect. The larger pigs can be housed together, and the smaller pigs won't have to compete with them.

Within a common age group, grouping older pigs into uniform weight pens is not recommended, although runts and poorly-doing pigs may be housed together. Older, growing pigs (i.e., 125 lb. pigs) put into uniform weight pens are just as variable in weight at market time as pigs that were not regrouped during growing or finishing [5]. Social interaction between pen mates is one important factor which causes weight variability in a pen.

Hog Behavior during Handling

Hogs have wide angle vision and are sensitive to sharp contrasts of light and dark. Lighting in weighing, breeding, and loading areas should be bright, but even. At least 15 to 20 foot-candles is recommended. Hogs will balk and may refuse to move if they encounter shadows, puddles, bright spots, a change in flooring type or texture, drains, metal grates, or flapping objects [8]. Animals reared under artificial illumination will often refuse to move outside into bright daylight. Loading will be easier if you design your loading ramp so that the hogs are lined up inside the chute before they leave the building. This will prevent them from turning around when they move into the bright daylight. A building over the loading ramp will also facilitate loading.

Hogs reared in enclosed buildings will balk at full daylight, but light can be used to attract them into trucks at night. Lamps can also be used to attract hogs onto scales or other facilities. The lamps must illuminate the area you want the hogs to move into. They must not shine directly into the eyes of approaching animals.

Hogs will stop when a solid barrier is placed in front of them because it prevents them from seeing an escape pathway. This is why a portable panel is efficient for moving hogs. Handling will be easier if you use a panel. A light aluminum panel with a hinge in the middle is recommended for separating hogs out of a pen.

Pileups and stress will be reduced by handling hogs in small groups. A broom is useful for backing up a hog.

Sows will readily back out of crates if they are tickled or pressed on the snout with a broom. Electric prods should never be used on breeding stock, and their use should be discouraged on other animals on the farm. Repeated electric prodding will cause a hog's heart rate to increase with each successive shock [9,10]. Excessive prodding can kill hogs.

When pigs are transferred from nursery pens with expanded metal floors to pens with concrete floors, they should be allowed to become accustomed to walking on concrete before driving is attempted. The pigs will be balky and difficult to drive until they have been on concrete for at least 30 minutes.

Crowd Pen and Chute Design

Many farms have poor loading and handling facilities because no space for facilities was designed into the building. Efficient loading and handling facilities require adequate space.

Funnel-shaped crowd pens must never be used for hogs. Hogs will become jammed in a funnel. Two jammed animals will keep pushing forward, and the animals will become severely stressed. A hog crowd pen must have an abrupt entrance to the chute to prevent jamming [8].

Figure 1 illustrates a hog crowd pen and single file loading chute with a small offset fence equal to the width of one hog at the chute entrance. The offset fence enables one hog to step aside to allow another hog to pass. The design enables the handler to reach both the leader hogs and the hogs in the rear of the group. This helps prevent pileups. With a shorter chute a pen similar to Figure 1 can also be used to direct hogs onto a scale.

Experience has shown that loading ramps with solid fences are more efficient. The crowd pen and a crowd gate

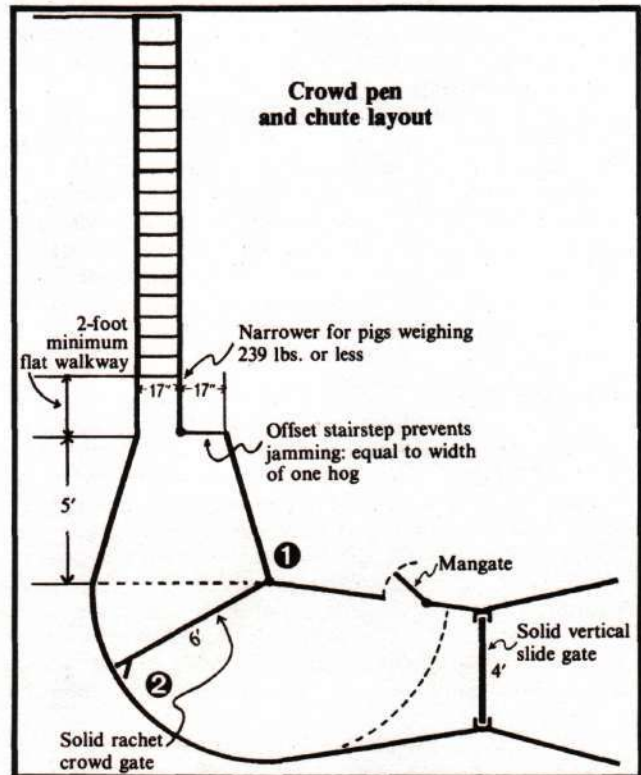


Figure 1. A crowd pen and chute for hogs that prevents jamming at the chute entrance. When the crowd pen is full, the handler stands in Position 1 and directs the leaders into the chute. After the crowd pen is partially empty the handler steps through the mangate into position 2 and pushes the crowd gate around.



Figure 2. Hogs move rapidly up a loading ramp with a "see through" divider down the middle. The outer fences should be solid.

should also be solid. A solid crowd gate prevents the hogs from turning back and attempting to return to the pens they just left.

Twin single-file chutes side by side facilitate loading (Figure 2). The two outside fences are solid to prevent balking caused by distractions outside the fence. The divider fence between the two chutes is "see through" to promote following behavior.

A common mistake is building chutes too wide. Single file width should be limited to 16 or 17 in. wide for market weight hogs and 18 in. for sows. If hogs jam at the entrance, restrict the width of the entrance to 15 to 14½ in. with a vertical piece of pipe. Use 2 in. (outside diameter) or larger, pipe to prevent bruising. If market hogs and sows are handled in the same chute make the entrance restricter removable.

A hog's heart rate increases as the angle of the ramp increases. The maximum recommended angle for a nonadjustable loading ramp is 20 degrees (about 48 in. x 11 ft. long). If space permits, make the angle 15 degrees (about 48 in. high x 15 ft. long). Forty-eight inches is the standard height of most semi-trailers. On concrete ramps, stairsteps with a rough surface are recommended. For market weight hogs, a 2½ in. rise and a 10 in. tread width works well. On wooden ramps, cleats should be spaced 8 in. apart. To prevent slipping and spreader injuries, all floor surfaces in handling areas should be nonslip. A light broom finish is too smooth for areas where hogs are loaded or worked. Imprinting the pattern of expanded metal into concrete provides a long lasting nonskid surface. A very rough broom finish can also be used.

Hog Transport

Each year 80,000 hogs leave U.S. farms but never reach market [11]. Seventy percent of these losses occur on the truck, and a high percentage of them are PSS (Porcine Stress Syndrome). Death losses often double on hot, humid days. When daytime temperatures and humidity reach the alert level on the Livestock Conservation Institute (LCI) Livestock Weather Safety Index [11] (Figure 3), deliver hogs to market before 11 a.m. When temperature and humidity reach the danger level, haul hogs at night.

Never use straw bedding when the temperature is over 60°F. The hogs will become too hot. Use either wet sand or wet shavings. Remove grain slats and open nose vents to ventilate trucks during the summer. Hogs must be

loaded and unloaded promptly. During the summer months, heat and humidity build up rapidly to dangerous levels in a stationary vehicle. When the temperature exceeds 80°F, sprinkle hogs with water before loading. Never throw large amounts of cold water on a hog that has collapsed from over exertion. The shock to its system may be lethal. Wet the ground around the hog or apply small amounts of tepid water. Do not put cold water on the animal's head. Wind chill can kill hogs during the winter. In winter and during cool temperatures, use straw bedding to keep the hogs warm and replace grain slats in farm trucks. Nose vents must also be closed in cool weather and open farm trucks should be covered.

To minimize death losses, a 200 lb. hog needs 3½ sq. ft. per animal [12,13]. It is common in the industry to load hogs 10 to 11 percent tighter, but the above space allowance was developed by the marketing boards in Canada to reduce death losses, bruises, and injuries. A 230 lb. hog requires 4.4 sq. ft. when the temperature is over 75°F and humidity is high. Table 2 shows the space requirements for hog transport. Hogs need more room when transported during hot weather. When the LCI Livestock Weather Safety Index is at the alert level, load 10 to 20 percent fewer hogs.

In farm trucks, use partitions to separate hogs from different social groups (pens) and divide the load with partitions to prevent pileups. Trucks should be cleaned after each shipment to prevent skin blemishes and disease transmission. Drivers should stop and start smoothly to prevent animals from being thrown off their feet. Careful driving reduces losses.

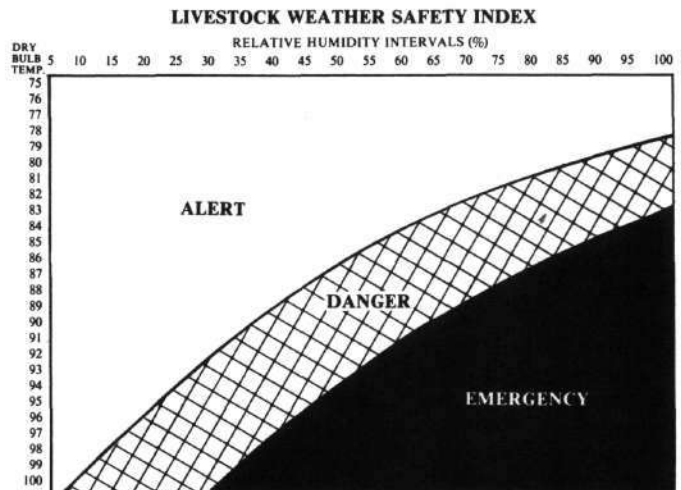


Figure 3. Livestock Conservation Institute Livestock Weather Safety Index.

Table 2. Recommended transport space requirements.

Average weight, lb.	Number hogs per running foot of truck floor (92-in. truck width)	Sq. ft. per head
50	5.0	1.53
100	3.3	2.32
150	2.6	2.95
200	2.2	3.48
250	1.8	4.26
300	1.6	4.79
350	1.4	5.48
400	1.2	6.39

Source: Livestock Conservation Institute.

Hogs to be slaughtered on the same day should be fasted 6 to 10 hours prior to loading. Water should be provided at all times. If they will be slaughtered the next day, feed them lightly. Hogs with full stomachs are more likely to die during transport. Fasting may reduce PSE (pale soft exudative) meat [14]. A total fast of less than 12 hours prior to stunning will usually not cause carcass shrink. Producers selling direct to packers should contact the packer for specific fasting recommendations. If the hogs are delivered to a market prior to slaughter, long fasts should be avoided. Hungry hogs may overeat shelled corn at the market.

Meat Quality and Bruises

Careful transit and gentle handling at the slaughter plant will maintain meat quality and reduce bruising and death losses. Bruising costs the swine industry 22 million dollars annually and losses from PSE (pale soft exudative) and DFD (dark firm and dry) meat are even higher. These losses are passed back to the producer in the form of lower payments. Overheated hogs, [15] and hogs that carry genes for stress susceptibility, are more likely to have poor quality meat. PSE is caused by both genetic and environmental factors. See PIH-26, *Porcine Stress Syndrome*.

Pork quality will be lowered by rough handling and excessive electric prod usage at the packing plant [16,17]. Resting hogs for 1 to 4 hours at the packing plant before slaughter and sprinkling during hot weather will maintain pork quality [14,18].

Conditions at the farm can affect handling and the incidence of damaged meat. Some hogs have weak hind-quarters and they are more likely to fall down and "split." The damaged meat has to be trimmed. This problem can be corrected by changing breeding stock. Slick floors also contribute to the splitting problem.

Hogs finished on metal mesh floors are much harder to load onto trucks and handle at the packing plant. Many of these animals have excessive hoof growth and they are more likely to become overheated and stressed because packing plant workers prod them more to keep up with the high speed operation. Hogs reared on totally slotted floors are also balky. Prior to shipping, these hogs should be given an opportunity to walk on solid concrete.

Observations at packing plants have also indicated that some groups of hogs reared in enclosed buildings are highly excitable which makes driving difficult. Excitability can be reduced by providing these hogs with toys and extra contact with people in their pens [2,3]. Playing a radio in the building will reduce a hog's startle response to sudden noises. In one trial, toys and five to ten minutes of contact with people once a week for five weeks in the finishing pens, made hogs easier to drive [19]. It is also possible to get animals so tame that driving is difficult. More research needs to be conducted before specific recommendations can be made. Hog reaction to people in the pens and toys will vary depending upon type of housing, genetics, husbandry procedures, and other factors.

Conclusion

Good handling facilities, knowledge of pig behavior, and consistent, gentle handling will help make your operation more productive and profitable.

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