

ONLINE ARTICLE

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A study by Jennifer Brown, T. Stevens and Harold W. Gonyou shows that farms with high prod use actually had the longest loading time. Their paper is published in the 2011 Annual Report from the Prairie Swine Centre.

Summary

For many producers, loading pigs at marketing can be both stressful and time-consuming. Problems at loading also affect the welfare of animals, and can have a significant economic impact due to carcass damage, meat quality problems or increased death losses.

The objective of this project was to identify components of swine loading facilities and handling at loading that have the greatest value for reducing pig stress and loading time.

A total of 10 load-out facilities in Saskatchewan were visited in this study, and the facility design and handling methods at each was documented using photographs and video footage. Observations were compared against recommended practice to identify design features and practices that promote good handling in pigs. Suggestions to improve handling at loading include aspects of ramp design and lighting, as well as simple changes to management and handling technique.

Introduction

Loading pigs for transport to market can be stressful for pigs and their handlers. Poorly designed loading facilities increase the incidence of prod use and rough handling, and result in longer loading times. Stress associated with loading can increase the incidence of downer pigs and death losses, as well as having adverse effects on carcass and meat quality. Methods for reducing stress at loading have been identified, however few producers have adopted these changes as construction costs are high and the benefits are uncertain.

This project documented loading facilities and handling methods in barns recognized for having good load-outs. The results provide clear suggestions for changes to facilities and management at loading, and will hopefully encourage the construction of better load-outs and adoption of practices at loading that can benefit pigs and producers.

The overall objective of the project was to document superior loading facilities and practices currently in used in the province of Saskatchewan. Specific objectives included;

- 1) the identification of 10 loading facilities that promote ease and speed of handling in market hogs;
- 2) evaluation of the design and management characteristics associated with each facility; and
- 3) preparation of a summary and educational materials for producers to aid them in improving the design and use of loading facilities.

Experimental Procedures

Saskatchewan farms with good loading facilities were identified based on information supplied by pork producers and truckers.



Figure 1. Covered hydraulic loading ramp with manway (looking down ramp from truck entry)

Once a farm was identified, the producer was contacted regarding participation in the study. Participating farms were selected from locations across the province in order to document a wide variety of load-out designs. Participating farms included corporations such as Fast Genetics and Big Sky Farms, as well as individual producers across the province. Each farm visit included a brief questionnaire on basic housing and management practices, measurements of the loading facility, and observation of the handling techniques used to move pigs at loading.

Load-out measurements included the width, length, and height of pens, alleys and doorways. Light intensity was measured in lux using a light metre placed at pig height at various locations throughout the load-out. Ramp angle was measured using a framing square and level, and calculating the inverse tangent of the rise over run. Any corners, flooring changes, or obstacles were documented using a digital camera.

Handling of pigs during loading was also recorded. For each farm visit, a video camera was either mounted in the load-out or hand operated by the producer to record handling techniques at loading. For each site, either live observations or video footage of pigs at

loading were reviewed in order to assess handling technique and pig flow. Handling techniques used on farm were also evaluated on the basis of appropriate/inappropriate use of tools, handler vocalizations, handler body position, attitude, and factors affecting the flow of animals.

The results of this study were descriptive observations. By examining superior facilities and handling methods, and comparing them with codes of practice and recommended practice, we identified design and handling practices that were effective at reducing stress in pigs during loading.

Results and Discussion

The ten farms studied included six farrow-to-finish operations, three finishing barns and one farrow-to-wean operation. On eight farms, the pigs were housed in small to medium groups (12 to 50 pigs per pen), and on the two remaining farms, pigs were housed in large groups of 600 to 700 animals. Hogs marketed per week ranged from 160 to 1100 animals, with an average of 500 hogs shipped per week. Loading time needed to fill a standard potbelly trailer (approximately 230 pigs) ranged from 30 to 90 minutes (45 minutes on average). Key facility and handling measures at each load-out were compared against recommended practice.

Load-out design



Figure 2. Well lit load-out with concrete steps (30-cm treads). Although this load-out involves some corners, the transitions are smooth and well-lit and the alley is wide enough for multiple pigs to pass



Figure 3. External loading ramp allows trucker to assist without entering barn. Note also the ramp extension (on the left) used to reduce the angle of internal truck ramp to the top deck

Recommended practice indicates that ramp angles should be less than 20°, that ramps should be fitted with cleats and have a non-slip surface. The ramps observed on all farms met these specifications, with ramp angles ranging from 0 to 11°. Figures 1 to 3 show examples of the ramps observed. The ramp designs varied considerably but all worked well. One farm had a covered adjustable hydraulic ramp with an attached man way, which was very efficient

for moving groups onto the trailer (Figure 1). As well, the adjustable ramp was used to load the top deck and reduced handling stress as it greatly reduced the angle pigs were required to climb compared to the internal truck ramp. Some farms had concrete step ramps with 30-cm treads, which the pigs readily negotiated (Figure 2). Another farm fabricated a ramp extension which was used to reduce the slope of the internal truck ramp, making it easier to load pigs onto the top deck (see Figure 3).

Lighting in the load-out area was also examined. It is recommended that loading facilities be well lit, with diff use incandescent lighting preferred as it reduces contrast and shadows, which may cause animals to balk. Also, when moving into a new area such as the truck, lighting should ideally change from darker to lighter, as animals may balk if required to move into darkness. Lighting levels (recorded using a light meter) showed a large variation in lighting between farms, ranging from below 100 lux at some facilities to over 1,000 lux at others. Lighting during loading was also affected by the time of loading and external weather conditions. Some facilities used an enclosed truck bay, which minimized the effects of time of day and weather conditions.

Other features of superior loading facilities were manways, dedicated loading pens near the load-out and external truck sheds. Manways outside of the alley allow for more efficient handling, as the handlers can easily move around and past groups of pigs without affecting their movement. This improves not only pig flow, but also handler safety.

Many barns had loading pens adjacent to the load-out that pigs were moved to up to a week before loading. This has the benefit of reducing mixing stress at transport and makes it much simpler to withdraw feed before transport, as well as making the loading process much faster, with reduced stress on pigs and handlers. Finally, some barns had truck sheds adjacent to the load-out. Sheds provide the advantage of having environmental conditions consistent between the barn and trailer, so pig movement onto the truck is not affected by wind, rain, cold temperatures or high contrast due to sunlight.

Handling practices

Recommended practices related to group size, distractions and handler technique and attitude were reviewed. In terms of group size, smaller groups (five to 10 animals) have been shown to be easier to move. If larger groups are moved, considerations must be made regarding the animals (level of fear and willingness to move), facilities (minimal blockage or distractions) and the handlers abilities.

Distractions are known to cause pigs to slow, balk or turn back, and farm managers must be observant to detect and minimize distractions in order to reduce stress and keep pigs moving. One common distraction is too many handlers, or handlers that get ahead of pigs and cause them to turn back. Several examples of this were found in the video footage and demonstrate how important it is to observe animals and minimize distractions during handling.

Handler technique and attitude are very difficult to define and measure, however some general recommendations include minimizing prod use, using behavioural principles such as the flight zone and herd behaviour, and maintaining a calm and consistent attitude.

Prod use on the farms observed was very low. In fact, the farm with highest prod use actually had the longest loading time. This is because when the prod is used frequently, pigs become less capable of responding and attempt to turn back. Several examples of good handling were

found. In one example, the handler stood well behind a group of about 20 pigs as they exited the home pen, providing 'release'. When pigs are moving well a good handler will step back and let the animals move on their own. If the handler steps in closer in an attempt to get them moving faster, the closest pigs will often turn back and escape past the handler. In another example, groups of 12 pigs were moved using handling boards and minimal prod use, and with minimal interference from handlers. The pigs exited a pre-loading pen, negotiated a turn and mounted the truck ramp calmly as there was plenty of space and the handlers provided an appropriate level of encouragement.

Conclusion

There is a large variation in facilities and handling skills across the swine industry, and often little opportunity for producers or barn employees to gain new knowledge.

Lighting, flooring, alley and ramp dimensions and animal handling techniques all have the potential to cause problems when moving pigs through a facility. The best load-outs in Saskatchewan are ones which have taken these factors into account.

The authors' conclusions highlight the fact that handling of pigs at loading can be improved by a variety of measures. This may include extensive load-out renovations, but frequently simple changes in lighting or handling techniques can also be effective. Producers appreciate seeing designs from other facilities and discussing the practical ideas and options presented in this work.

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