

Training Sows & Staff for the Transition from Stall to Pens: The Role of the Human-Animal Interaction

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Introduction

Much of the preparation when transitioning gestating sows from stalls to loose housing centers around issues related to agricultural engineering. This includes how the new facility will be achieved (i.e. via new construction, expansion, or retro-fitting), the type of the feeding system to be used (floor feeding, free access stalls, electronic sow feeding etc), and layout of the barn and pen design (Parsons, 2013; Parsons, 2015). Taken together these decisions often dictate how animals will flow through the barn (segregated parities, pre- versus post-implantation or static vs dynamic pens). All these decisions are critical to a proper loose housing system, but will remain correct for the duration of the life of the facility. Thus in reality, for this part of the transition to be successful these engineering details only have to be done right once during the planning and construction of the barn.

This is in contrast to preparations and decisions related to people. Based on my experience with helping over 75 farms transition from stalls to electronic sow

feeding, getting the human elements correct has proven to be the bigger challenge. Achieving this goal is potentially much harder as it needs to be right every day that the barn is in production. Successfully managing the human elements involves identifying the correct individuals to work in a pen gestation barn, providing the proper training for these individuals, and then also surrounding them with the proper supervision and guidance on a day-to-day basis. This view is supported by a survey of farmers who identified their greatest challenge when transitioning to electronic sow feeding as developing a new approach to management and husbandry and acquiring the technical skill required to operate the system effectively (Patterson et al., 2011).

I will argue in this paper that central to conquering the people challenge is the human-animal interaction. This facet of animal husbandry is the basis of stockmanship and has always been important in all types of animal agriculture. However, the increased use of loose housing for gestating sows much more readily reveals when human-animal interactions are being neglected or misunderstood. The training of animals to use the electronic sow feeding system is one glaring example where we see huge farm-to-farm differences in how well the human-animal interaction is handled and provides an interesting case study to consider the human dynamics associated with the success of loose housing. Fortunately, there is a wealth of information on what steps can be taken to improve human-animal interactions once they are identified as a problem on the farm and will be discussed here in the context of loose housing for sows.

Maximizing the human-animal interaction

Hemsworth and his colleagues have put forth a formalism to consider what contributes to the performance of an animal agriculture worker. They highlight three facets that are predictive of a workers success: *willingness, capacity and opportunity* (Coleman and Hemsworth, 2014). Willingness and capacity are managed at the level of the individual stockperson whereas opportunity reflects farm level decisions. Here I will consider these concepts in terms of a pen gestation worker and how they relate to human-animal interactions.

Willingness - encapsulates a variety of personal attributes of the worker such as their personality traits, motivation, commitment, self-image, and attitude. Some of these factors, such as personality traits, are enduring and not thought to be malleable whereas other aspects, such as worker attitudes, are influenced by a variety of external factors and can be changed. The question of appropriate personality type for animal agriculture employees has been examined. The results of such studies are complicated by the several different metrics used to describe human personality types and the different ways that the impact of personality type is measured (Hemsworth and Coleman, 2011). In some cases, correlations are seen between personality type and human-animal interactions, and in other cases only correlations between personality type and worker attitudes, but not behavior. On the other hand, there is good evidence to support the notion that a worker's attitude is predictive of their behavior toward animals as well as a variety of animal metrics including animal behavior and productivity

(Hemsworth et al., 1989; Hemsworth et al., 1990; Breuer et al., 2000). Moreover, these attitudes can be changed through appropriate training programs sometimes called “cognitive-behavior training” (Hemsworth et al., 2002). Such programs to improve worker attitude can result in improved human-animal interactions, improved animal behavior and improved productivity. For instance, Hemsworth et al (1994) showed after an appropriate training program that swine workers could improve their attitudes about human-animal interactions and these improved attitudes correlated with less negative behaviors by the stockpersons towards the animals, improved animal behavior as measured by less fearful sows, and improved productivity as manifest by an increase in pigs weaned per sow per year. Undoubtedly certain individuals may be better suited to working in loose housing than others. However, behavior training that addresses individual worker attitudes about human-animal interaction promises to improve the success of stockpersons in these systems.

Our empirical experience with starting up loose housing farms echoes many of the points encapsulated by a worker’s willingness. Selecting the right people to work in loose housed sow systems has been critical to the success. We have found that identifying individuals who can adequately manage change are some of the best candidates for moving to work in a new loose housing project. Workers need to be sufficiently motivated by new challenges to embrace the change. Those who are successful in a crated gestation facility, but lack the ability to adapt well to new situations, are better left in their current positions.

In many cases, it may be better to recruit individuals without prior experience in a crated gestation facility to work with loose housed sows. In particular, if the care taker likes animals then they typically will like working in a loose housed sow facility as there is ample opportunity for them to have positive interactions with animals. It can be easier to teach this individual who likes animals how to inseminate a sow than vice-versa and those workers who readily identify with animals will also most always enjoy greater job satisfaction than the others. Perhaps in these cases we are identifying individuals that possess a greater sense of empathy for animals. The success of these individuals may be related to having a more intuitive sense of human-animal interactions and the greatest capacity for stockmanship.

Capacity - refers to the technical skill and knowledge that a worker has on a sow farm. Clearly a lack of technical skill and knowledge will quickly limit the success of a worker on a farm. Thus it is critical to have the appropriate training programs in place for technical skills to ensure the success of the workers. It is important that stock-people have a good general knowledge of the nutritional, environmental, social and health needs of the animal with which they work. They also need the opportunity to develop the practical experience in the care and maintenance of the animals under the conditions of the loose housing system. And finally workers need to understand how to quickly identify departures from normal behavior, health or performance of the sows and have a plan in place to correct the situation or seek appropriate guidance to address their concerns. The better equipped the stock-person is with technical skill the more likely they

are to succeed at their job and foster a greater sense of job satisfaction. Increased job satisfaction will increase willingness as described above as well as prompt worker retention, a key to developing increased levels of staff expertise critical to the successful management of these emerging loose housing systems. Our field experience has highlighted the challenges associated with providing the right technical training for individuals working in loose housing. In most cases, it is not possible to fully staff a barn with workers experienced in the appropriate type of loose housing given the relatively novelty of these systems. There are three levels of opportunity in terms of training staff to work in pen gestation barns: improving attitudes about animals, improving general animal handling skills, and improving specific operating procedures for the management of loose housed sows. The role of improving worker attitudes is described above. There are also several approaches to improving general animal handling skills focused on so-called low stress handling of animals.. Understanding animal behavior and how the animal will perceive and react to human interactions is critical to developing appropriate animal handling skills. Eliciting fear in an animal in most cases is a detrimental to good stockmanship. The nature of gestation stalls has the possibility to mask the negative reaction of sows to bad stockmanship. However, in loose housing manifestation of animals' fears are exacerbated as the sow as the opportunity to flee the working, often generating frustration in the worker which can result in further inappropriate stockman behaviors that will reinforce the fear response of the animal. It is imperative that workers understand this cycle of negativity and prevent it from starting through appropriate behavior around the animals. Every attempt needs to be made to prompt positive human-

animal interactions in a loose housed sow barn. This includes frequent and regular observation of the animals by staff. Walking of the pens provides the opportunity for workers to re-enforce positive behaviors towards the animals, such as slow deliberate movements in the pen, quiet non-threatening vocalizations and gentle touching or petting of the animals. Furthermore, when potentially painful or stressful interactions are required, such as vaccination, every effort should be made to minimize the negative impact on the animals.

Critical to the development of positive human-animal interactions in the loose housed sow barn are appropriate standard operating procedures. First tasks need to be clearly identified and then described in a succinct but thoughtful operating procedure. It can be surprising how challenging it can be to successfully adapt the sow management practices from a crated barn to a loose housed sow barn. In practice, we divide tasks into three categories relative to what is done in conventional crated barn:

1 – tasks that are done in a conventional barn that are done the same way in the loosed housed barn. An example might be insemination if sows are weaned into crates and breed in crates prior to being introduced in to pens.

2 – tasks that are done in a conventional barn that need to be done differently in the loose housed sow barn. This would include things like basic observations of sows, pre-farrowing vaccinations and perhaps ultrasonic pregnancy evaluation depending when during gestation the sows are moved into pens.

3 – *tasks that are novel to the loose housed sow barn.* Example here for an electronic sow feeding barn would include radio-frequency identification (RFID) tag management and gilt training.

In some cases, it can be difficult to visualize or understand how the latter two categories of tasks can be realized. As such we highly recommend that critical staff members (managers, breed leads, and service supervisors) spend time in an existing loose housed barn to better understand how to adjust management practices to meet the needs of a loose housed sow. Often the introduction of a new loose housing system meets with some skepticism across different levels of the production team. It is imperative that staff members have a vision for how the barn can be successfully managed. There are far more ways for the barn not to work than work and thus if people don't believe that it can work then it won't. Critical to this vision of success is the ability to see the system working on other farms. Furthermore, the commitment to and vision for success must be uniform across all levels of the production team from top to bottom. Too often the role of the sow farm supervisor or service person is over looked in the initial training processes. These individuals have often reached their position through years of successful experience managing sows in gestation stalls. They need to share the training experiences of the people they will be supervising or else their effectiveness as a supervisor will be comprised. If the barn staff knows more about the loose housing system than the service person then roles become inverted and barn staff no longer benefit from the service person. Such inversion

of expertise can make the service person uneasy with their role in this new barn and generate unnecessary negativity about the success of the project. Unfortunately, in such hierarchical management systems individuals tend to look to the person above them on how to behave, and an inappropriately trained service person's negativity can have a trickle-down effect and poison the success of the barn staff. Interestingly, this is likely a temporary problem that should organically correct itself over a 5 to 10 year period as barn managers with experience with loose housed sows are promoted to service person positions. However, in the short term the issue of appropriate training for service people is a real problem that should not be over looked.

Opportunity - reflects a variety of farm level management decisions often external to the individual stock person. These would include working conditions, actions of co-workers, organizational policies, staffing requirements, pay scales, and incentives to name a few. These factors have the potential to impact how successful a worker can be in using their willingness and capacity to achieve successful job performance. One aspect of opportunity that we see in our field work as a particular challenge is adequate oversight of loose housing and how to maintain individual worker accountability and provide constructive feedback for job performance improvement. Typically all staff in a loose housed gestational barn are seeing all animals. Given that the animals are not fixed to a specific location in the barn like a crated facility, it may be hard for staff to make repeated observations of animals and or share these observations with other workers. In some cases although all animals are seen by all the staff rarely are animals

observed as individuals and clearly this is a problem for animal care. To facilitate the identification and tracking of individual animals requiring individual attention it is important to mark these animals in a reproducible and specific way. For example, animals requiring lameness treatment could be marked with an “L”, whereas an animal that has returned to estrus with an “H”, or an animal missing a tag with a “T” such that others working the barn understand the specific attention this animal needs. Furthermore, to help with the identification of individual animals, it is helpful to provide reference markers or labels within the barn for specific areas. In the case of a small pen/floor feeding system it would be important to identify individual pens for specific reference. With larger pen based systems, such as ESF that may utilize partitioned sleeping bays or bedrooms, it can be instructive to specifically label the individual bays for worker reference as animals often sleep or rest in the same place in the pen. Thus, rather than saying that there is a lame animal to treat in pen 8, we can say that we need to find the animal in pen 8 bay 3 and the task is reduced to finding the animal among 70 others to only 7 others. Improved specificity of worker tasks makes it easier to hold individual workers accountable and will improve the husbandry in the barn.

Gilt training

Critical to the success of a loose housed system such as ESF is the need to train new animals coming into the barn to use the feeding technology. This is a relatively easy task given that pigs are both intelligent animals and highly motivated to feed. We have observed varying degrees of success with gilt

training across farms. A variety of things go into a successful gilt training program that include how the gilts are reared, the use of pre-training, and the specifics of training pen design. However, the role of human-animal interactions described above are perhaps most evident in the success of a gilt training program. Positive human-animal interactions greatly contribute to the reduction of fear and stress of gilts during the training process. Increased fear and stress will hamper or preclude the gilt from learning to use the ESF station. These animals will be hard to get to enter the station and forcibly doing so usually only makes the training experience more aversive to the gilt. Furthermore, a fearful gilt will not stay in the feeder long enough to understand its function. Most farms with successful gilt training programs have identified workers with an implicit or explicit understanding of human-animal interactions. They manifest themselves as calm and patient individuals that are attuned to the behavioral responses of the pigs. In farms that are struggling with training gilts it would be interesting to see if the training process could be improved by cognitive behavioral training to improve worker understanding of the human-animal interaction and to reduce worker behaviors that elicit negative reactions in the animals. Towards that end, care must be taken that systematic practices are not in place on the farm to negatively impact gilt training. In particular, gilts entering the herd must be identified and that may involve placing a barn tag, an RFID tag as well as a tattoo. All of these processes result in negative human-animal interactions as they are at least fearful and at times painful for the gilt. Furthermore, is it also not uncommon for these gilts to also receive multiple vaccinations upon entry to the herd. Clearly if these processes, which elicit negative experience for the gilts,

are conducted too close to the onset of ESF training they promise to compromise the training process through the establishment of negative human-animal interactions.

Conclusions

People are at the heart of any successful animal husbandry endeavor. The institution of loose sow housing in North American serves to remind us of the critical role that people play in our barns. Three major aspects of optimizing the human element in a loose housed sow barn have emerged from our experiences on the farm. This includes: selecting the right individuals to work in the barn, providing adequate training/preparation for those individuals, and finally supporting those individuals with appropriate guidance and supervision. However, underlying the success of the people component in loose housing is the human-animal interaction. Based on our field experience and existing scientific study, more explicit consideration of how best to improve human-animal interactions through worker selection, training and supervision promise to improve the transition from gestation stalls to loose housing systems.

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