

Disease Prevention

Piglet Management And PRRS

Paul M. Pitcher, DVM, and
Thomas D. Parsons, DVM,
New Bolton Center,

School of Veterinary Medicine, University of Pennsylvania

Traditional veterinary interventions for the treatment or control of infectious disease usually include antibiotic therapy or vaccination. A progressive definition of disease recognizes management, facilities, genetics, and nutrition, as well as infectious agents, as important potential causes of health problems. The emergence of severe diseases affecting newborn pigs such as Porcine Reproductive and Respiratory Syndrome (PRRS) has required re-evaluation of management practices in order to minimize losses.

Crossfostering is often considered an important farrowing house management practice to reduce preweaning mortality in young pigs. In many of the herds that we visit, extensive crossfostering policies are common. Piglets are initially sorted and then disadvantaged animals are moved regularly during lactation in an attempt to maintain size uniformity within a litter. Herds with the majority of litters disrupted are common.

When successfully implemented, the result of crossfostering is to improve fostered pigs' access to their source of nutrition—milk. The goal is to balance nutritional needs of the piglets with that provided by the sow. This goal cannot be achieved without observations on the fostered pig's current source of nutrition and its projected source (the sow it will be moved to). Therefore, an important part of our recommendations on crossfostering policy is to determine each lactating sow's capacity by counting functional glands.

This is easy to do at farrowing by simply palpating each gland for fullness and suppleness. Pigs required to nurse smaller or hardened glands will not thrive. This will be evidenced in litter weaning weights. Litter weaning weights are one of the best ways to assess sow productivity, and if labor can be supplied to gather the data are extremely useful in making culling decisions that serve to increase the average productivity of lactating sows. It is our opinion that failure to assess each lactating sow's productivity (either by examining udders or by measuring litter weaning weights) is a big reason for excessive crossfostering as managers scramble to find every nursing pig a place at the table.

It is sound advice to completely avoid crossfostering beyond the first day of age, especially when greater control over disease incidence rate is desired. Several biological and behavioral factors tend to be compromised if crossfostering is practiced beyond the first 24 hours post-farrowing. At birth, piglets receive passive immunity in the colostrum against the largest source of pathogens in their environment—the dam.

Unless all lactating sows have identical disease and vaccine exposure histories, there is likely to be a mismatch be-

tween immunity provided in colostrum and disease exposure in newborn pigs that have been fostered to a sow other than their mother. Furthermore, recent work indicates that, with PRRS, pigs can be born with the infection.

Often, these pigs are the smaller, weaker pigs and are more susceptible to secondary bacterial infections. If the crossfostering policy is to move disadvantaged pigs to give them a better chance at survival, a bad situation (pigs born with PRRS or carrying secondary bacterial infections) is made worse as crossfostered, diseased pigs are given the opportunity to spread the infection to previously healthy litters. Of course, the opposite scenario is also possible—healthy crossfostered pigs are placed in an infected litter—as glands are vacated by pigs that have succumbed to disease.

Social hierarchy within the litter is also formed at birth. Disruption of litters late in lactation can reduce pig growth rates and causes behavioral problems in fostered pigs, resident pigs, and the sow. Fostered pigs have increased ambulation, vocalization, and an increased reluctance to engage in suckling. These pigs may also exhibit a withdrawal syndrome. Such disruption of the litter causes more pig-to-pig aggression even between resident pigs, and sows also exhibit aggression toward foster pigs, especially older pigs. Also, as age at fostering increases, the behavioral abnormalities increase and extend the time required for fostered pigs to integrate into their new environment. Abnormal behavior can be greater in litters with animals of equal status compared to litters that contain a mix of dominant and submissive pigs. Therefore, we do not recommend that piglet size be used as an important criterion in crossfostering decisions.

So-called McRebel (management changes to reduce exposure to bacteria to eliminate losses) attempts to minimize the spread of the PRRS virus and maximize the piglet's protection afforded by its maternally derived immunity. Accordingly, one of the tenets of McRebel is to minimize or even eliminate crossfostering after the first 24 hours of life.

We have developed tools to measure the effectiveness of crossfostering and to monitor crossfostering policy. These computer-based tools are driven by observations collected in the farrowing house. We welcome the opportunity to work with swine producers seeking to improve the performance of their herds.

References: Fraser, DK. Behavior and misbehavior in the lactating sow and litter. In Proceedings, American Association of Swine Practitioners 26th annual meeting, seminar session 10, 1995; McCaw, MB. Effect of reducing crossfostering at birth on piglet mortality and performance during an acute outbreak of porcine reproductive and respiratory syndrome. *Swine Health Prod.* 2000;8:15-21; Price, EA, Huston, GD, Price, MI, Borgwardt R. Fostering in swine as affected by age of offspring. *J. Anim. Sci.* 1994;72:1697-1701.