

## **Investigating the Benefits of Inducing Sows to Farrow**

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### **Introduction**

The importance of piglets receiving adequate amounts of good quality colostrum shortly after birth has been well known for a long time but recently has gained new importance as a result of the realization that serious diseases such as PRRS and PMWS are at least partly controlled on a herd basis by ensuring solid immunity among the suckling piglet population. The only way to make sure all piglets are born strong and receive colostrum in the first few hours of life is to supervise farrowings. Induction of sows to farrow during daytime can help ensure newborn piglets are assisted if necessary. The use of prostaglandin (PGF) for induction of farrowing is common practice in the swine industry. Advances have been made in induction protocols that allow for reduced drug dosage (vulva injection) and improved predictability (split-dose injection).

The main objectives of this study were; to determine if the predictable induction of farrowing and subsequent supervision at parturition reduces stillbirths and neonatal mortality and to determine if uniform levels of immunity in suckling piglets can be achieved through intensive care at farrowing.

### **Materials and Methods**

The study was conducted on a commercial swine farm selected because of an older sow population and a relatively high stillbirth rate. A total of 140 sows were randomly assigned to a treatment (56 sows) or a control (84 sows) group. Treatment sows were induced to farrow using a split-dose vulval injection of 5 mg PGF (first injection at 8 am and second injection at 2 pm) and a subcutaneous injection of 8 mL calcium borogluconate administered at the time of the first PGF injection. Control sows were left to farrow naturally. Treatment sows were monitored during farrowing and assisted as needed. Piglets were dried, and kept warm and at the end of farrowing all piglets were allowed to suckle. If piglets appeared weak, or were splay-legged, they were tubed and provided with 10mL of colostrum. If there were too many piglets for the number of nipples the litter was split-suckled. Litters born to Control sows were handled using the farm protocol, which involved a minimum of intervention. All piglets, from Control and Treatment sows were weighed at about 48 hours and 21 days. At the time of weighing, blood samples were taken from the largest and the 2 smallest and the median weight pig in each litter. Mortality was recorded. Blood was tested for antibodies and immunoglobulin.

**Results**

Stillbirths were reduced in the Treatment litters. Timely intervention resulted in a 36% reduction in the likelihood of a stillbirth occurring in a litter from the Treatment group compared to the Control sows. Forty-nine percent of control litters had at least one stillborn piglet whereas only 27% of the Treatment sows recorded a stillbirth. There was no difference in the number of pigs weaned but piglets from Treatment litters were slightly heavier at weaning (270g at 21 days). The prevalence of positive PRRS titres in this herd was less than 5% of sows and therefore serological results of PRRS titres among piglets could not be used to show the value of colostrum supplementation. Sera are being tested for total immunoglobulin levels in order to prove the uniformity of immunity within litters.

**Discussion**

This induction protocol resulted in almost 100% of sows, which were induced, farrowing during the following day. The vulval injection technique results in very rapid uptake because of the good blood supply in the area and the few sows that do not respond from the first injection are caught with the second injection 6 hours later. Using a half dose each time reduces the likelihood of side-effects (restlessness, salivation, transient rise in temperature). This technique makes this an off-label use and therefore producers need to consult with their veterinarians regarding this procedure. There are reports in the literature of induction causing lightweight piglets and increased mortality as a result of piglets being born too early. Induction should occur so that pigs are born no sooner than 2 days before a natural birth. Because many herds count gestation from the day of first breeding gestation is often about 117 days. In such herds a piglet born on gestation day 113 may be premature. In this study Control and Treatment piglets were of similar weight.

It is becoming clear that one of the best ways to prevent piglets from picking up an infectious disease like PRRS or PCVAD is to ensure piglets all receive adequate colostrum, particularly from their own mothers. Because of the variation in birth weights and variation piglet weights and viability at birth, uniform immunity can only be achieved by careful supervision and supplementation of colostrum when necessary. This protocol appears to make that easier.