

be widely recommended for different applications in male dogs.

Keywords: Dog; GnRH antagonist; Acyline; Semen; Testis

ANALYSIS OF THE ASSOCIATION OF FARROWING INTERVENTIONS AND PERIPARTURIENT FACTORS AFFECTING SOW LONGEVITY

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The extent of sow retention in any herd is dependent on the level of culling and the mortality rate. Sows may leave a herd through death/euthanasia or culling. The economic loss associated with sow death is obvious in terms of the value of the sow, lost pig production, replacement cost and increased herd health risk. The performance of the sow is the most important factor deciding voluntary removal from the herd. However, the performance is greatly influenced by management and environmental factors. Larger litter size is often a highly sought-after performance variable in swine breeding herds. However, selection for litter size can have a negative effect on the number of stillborn piglets. Although the causes for stillbirth are complex and multiple in pigs, the need for farrowing assistance is often linked to a high stillbirth rate. Sows with stillborn piglets are more likely to die than those without stillborns. Induction of farrowing is a management intervention in commercial farms. However, induction of farrowing has been suggested to increase the need for farrowing assistance. The risk of removal is not the same throughout the life of a sow. Periparturient period is a high risk time for sow removals. The present study aims to analyze the periparturient risk factors associated with sow removals in breeding herds before next parity. Retrospective data involving 68,159 parity records of sows from a commercial farm in Minnesota, pertaining to the period 2002–2005, were retrieved from the PigCHAMP Database (PigCHAMP Inc., Ames, IA). The association of parity (categorized as parity 1, parities 2–5 and parity >5), piglets born alive (continuous variable), mummies and stillborn (categorized as present or absent), season of farrowing (grouped into four quarters), farrowing induction (induced or not) and farrowing assistance (needed or not) on removal or retention of the sows was analyzed using logistic regression model (SAS V 9.1). The likelihood of removal from the herd decreased by 10% with the birth of every live piglet ($P < 0.05$).

The likelihood of removal from the herd was 64 and 52% lower for sows of parities 1 and 2, and 3–5 compared to sows of parity >5 ($P < 0.05$ for both). Sows farrowing in the second and third quarter of the year had higher likelihood of removal ($P < 0.05$ for both) from the herd than sows farrowing in the last quarter (odds ratios 1.088 and 1.341, respectively). Sows with no stillborn piglets were 12% less likely ($P < 0.05$) to be removed from the herd than those with stillborn piglets. Sows that did not need assistance in farrowing were 10% less likely ($P < 0.5$) to be removed than those requiring assistance for farrowing. Farrowing induction was found to be beneficial in that induced sows were 18% less likely ($P < 0.05$) to be removed than non-induced sows. The results indicated that farrowing interventions and other periparturient factors are important in deciding sow longevity.

Keywords: Sow longevity; Farrowing assistance; Induction; Parity; Stillborn

THE USE OF LEUKOCYTE ESTERASE REAGENT STRIPS FOR DIAGNOSIS OF SUBCLINICAL ENDOMETRITIS IN DAIRY COWS

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Recent investigations have revealed that mild endometritis, both clinical and subclinical, is common in high producing dairy cows, and that it significantly impairs reproductive performance. In many cases, the diagnosis is not clinically evident and must be determined by endometrial cytology. Although neither complex nor costly, endometrial cytology lacks immediacy, and does require equipment and expertise. In this study we investigated the use of low volume uterine lavage and the use of a commercial diagnostic strip test for urinary neutrophils for diagnosis of mild endometritis.

Postpartum dairy cows from two herds ($n = 112$) were used in this study. Samples ($n = 253$) were taken from each cow on one to four occasions between 1 and 7 weeks postpartum. Samples obtained by lavage of the uterus with 20 ml of sterile saline were processed for cytological diagnosis [Gilbert, et al. *Theriogenology* 2005;64:1879–88]. A subjective inflammation score (of 0–3) was assigned and 200 cells were counted and identified as epithelial cells, small mononuclear cells (lymphocytes) large mononuclear cells (macrophages) and polymorphonuclear cells. The proportion of each cell type was calculated. Independently, each recovered sample was subjected to testing with a diagnostic test

strip (Multistix[®], Bayer Diagnostics) according to the manufacturer's instructions. Results were recorded as negative, trace, +, ++ and +++.

The correlation between subjective score and percentage of polymorphonuclear cells was extremely high ($R = 0.918$; $P < 0.0001$). Using a cutoff point of 5.5% polymorphonuclear cells as an objective definition of endometritis, subjective assessment as inflamed was 96% sensitive and 98% specific. Similarly, the reagent strip result was highly correlated to polymorphonuclear cell percentage ($R = 0.774$; $P < 0.0001$). A score of + or higher on reagent strips predicted endometritis with sensitivity of 83% and specificity of 94%. Finally, the cytological categorization and reagent strip diagnosis showed a high degree of agreement ($\kappa = 0.599$; $P < 0.0001$) as did subjective cytological categorization and objective cytological assignment ($\kappa = 0.923$; $P < 0.0001$). Agreement between objective categorization and reagent strip category was high ($\kappa = 0.622$; $P < 0.0001$).

These results confirm that reagent strips have utility for diagnosis of mild endometritis in dairy cows in conjunction with low volume uterine lavage. This provides a rapid, inexpensive and simple means of assessing individual cow status or for determining endometritis prevalence in dairy herds.

Keywords: Dairy cow; Endometritis; Leukocytes; Reagent strips

EARLY PREGNANCY DIAGNOSIS BY PALPATION PER RECTUM ON EMBRYO/FETUS VIABILITY IN DAIRY CATTLE

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In bovine practice, palpation per rectum is one of the most frequent procedures performed by veterinarians and is the most frequent method used for pregnancy diagnosis. There is contradictory information about the potential

deleterious effects of palpation per rectum for early pregnancy diagnosis on embryo/fetus viability. The present experiment estimated the effect of palpation per rectum for early pregnancy diagnosis on embryo/fetus viability in dairy cattle. A controlled, randomized block-design experiment with two blocks, one by category and the other by number of embryos was conducted. Five hundred and twenty pregnant dairy cows and heifers with a viable embryo detected by transrectal ultrasonography [TRUS] between days 29 and 32 after artificial insemination were included. The pregnant females were randomly divided into two equal groups: palpation per rectum [PAL group; $n = 258$] and no palpation per rectum [NPAL group; $n = 262$]. The PAL group was submitted to palpation per rectum [PPR] using the fetal membrane slip [FMS] technique once between days 34 and 41 of pregnancy. The fetal membrane slip consists of in the compression of the pregnant uterine horn and letting it slip between the fingers the chorioallantoic membrane. Both groups were submitted to two additional TRUS at days 45 and 60 of pregnancy. Day 45 was used to monitor the potential immediate deleterious effect of PPR on embryo viability. Day 60 was used to monitor the potential delayed deleterious effect of PPR on fetus viability. The diagnosis of embryo/fetus death was made when there was no embryo/fetus heart beat, signs of embryo/fetus degeneration were observed, or when positive signs of pregnancy were absent in a cow/heifer previously diagnosed as pregnant. The overall embryo/fetus death was 14.0%. Embryo/fetus mortality was higher in cows [16.4%] than in heifers [8.8%; $P < 0.025$]. Embryo/fetus mortality was higher in twins [25.5%] than single pregnancies [12.9%; $P < 0.025$]. Embryo/fetus death between PAL [14.7%] and NPAL [13.4%] groups was not significantly different [$P > 0.05$]. It was concluded that PPR for early pregnancy diagnosis using the fetal membrane slip technique did not affect embryo/fetus viability.

Keywords: Cattle; Pregnancy diagnosis; Palpation per rectum; Safety