

Lactation Length Effects on Reproductive Performance and Embryo Survival

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The trend in North America is to wean sows after shorter lactation lengths than were common 5 years ago. Early weaning maximizes farrowing crate usage, may improve piglet and herd health and may increase the number of litters/sow/year. However, sow reproductive performance may be detrimentally affected by early weaning. Effects include increased weaning to estrus interval (WEI), decreased farrowing rate and reduced litter size. These factors usually offset the advantages so that overall pigs/sow/year is not increased. The objectives of this study were to determine factors affecting the reproductive performance of early weaned sows.

71 primiparous F2 sows were assigned to one of two lactation treatments; early weaned (EW, weaned at day 14) or conventionally weaned (CW; weaned at day 24). Sow body weight, backfat depth (P2) and litter weights were recorded at farrowing and at weekly intervals until weaning. The day following weaning, sows were heat checked twice daily (0600 and 1800 h). At the onset of standing heat, sows were bred using pooled semen and then again 24 hours later. Ovaries were scanned every 6 h using ultrasound to determine time of ovulation. Sows were slaughtered either 6-24 h after ovulation (day 1) or at day 28 of gestation to assess embryonic development *in vitro* (day 1) and embryo survival *in utero* (day 28). A measure of ovulation rate was also recorded.

Weaning weights of sows were not different. EW sows had a significantly higher P2, indicating better body condition at weaning. The EW sows had a WEI of 5.68 days (134 hrs) compared with CW sows, 4.91 days (113 hrs); these differences were not significant. Ovulation rate was not different between the two groups. Further data on embryo survival and endocrine status of the sows remains to be analyzed.

Implications

The results of this experiment will confirm whether poor conception rates and suppressed litter size associated with short lactation lengths is in part due to an abnormal relationship between ovulation and the timing of insemination or whether incomplete uterine involution affects embryo mortality.