



BEEF CATTLE RESEARCH UPDATE

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Does Rectal Palpation Effect Pregnancy Loss?

The most common method of assessing pregnancy in cattle is rectal palpation. However, there is some concern that rectal palpation to determine early pregnancy may cause physical trauma, resulting in pregnancy losses. A recent Texas A&M University study determined the effect of rectal palpation during early gestation on pregnancy loss in dairy cattle.¹ In this study, 928 dairy cows were determined to be pregnant by ultrasound at approximately 31 days after estrus and allocated into two groups (controls – 476 hd and palpation group – 452 hd). The control cattle were not subject to additional pregnancy diagnosis via rectal palpation. The cattle in the palpation group were further allocated into two subgroups which were rectally palpated using the fetal membrane slip (FMS) technique. These two subgroups were palpated via 1 or 2 FMSs (FMS 1 – 242 hd and FMS 2 – 234 hd) during the same examination between days 34 and 43 after estrus. All cows were palpated by a single veterinarian (board-certified theriogenologist) with more than 25 years of bovine practice. All cows were reevaluated by the use of ultrasonography at 45 and 60 days after estrus to determine the viability of the embryo and fetus, respectively.

These researchers reported that the overall pregnancy loss between days 31 and 60 was 14.1%. The total pregnancy loss between days 31 and 60 for the control, FMS 1, and FMS 2 groups was 14.5%, 12.6%, and 14.9% ($P = 0.96$), respectively. Late embryonic pregnancy loss (days 31 to 45) for the three groups was 12.4%, 9.1%, and 9.5% ($P = 0.68$), respectively. Fetal pregnancy loss (days 46 to 60) for the same groups was 2.4%, 3.8%, and 5.9% ($P = 0.28$), respectively. The authors concluded that rectal palpation during early gestation did not increase pregnancy loss in dairy cattle.

Relationship between Climatic Conditions and the Incidence of Calving

An Arkansas study examined the relationship of barometric pressure and maximum and minimum temperature with the incidence of calving using calving data from a five year period (2005 to 2009) from two locations in Arkansas (Batesville and Savoy).^{2,3} Both locations calved in the spring (February to April) and fall (August to November). During this period, 2,210 calves were born over a cumulative 1,547 days. Calving occurred on 54% of the days. All cows were multiparous, predominately Angus, and naturally bred. The combined calving records and climate variables were used to determine differences in barometric pressure, maximum temperature, and minimum temperature on the day of calving and 1, 2 and 3 days before calving occurred or did not occur.

These researchers reported that there was a season by calving observation effect ($P < 0.05$) for all 3 climatic measurements. Spring barometric pressure on the day of calving and 1, 2 and 3 days before calving was greater than the corresponding non-calving dates ($P < 0.05$), but no differences were observed in the fall ($P > 0.10$). Spring maximum temperature was lower on the day of calving (58.5 vs. 60.8°F) and 1 (57.9 vs. 60.8°F) and 3 days (57.2 vs. 60.3°F) before calving than the corresponding non-calving dates ($P < 0.05$), but fall maximum temperature was higher days 1 (75.9 vs. 73.2°F) and 3 (76.6 vs. 74.1°F) before calving than the corresponding non-calving dates ($P < 0.05$). Similarly, spring minimum

temperature was lower on the day of calving (36.7 vs. 39.0°F) and 1 (36.5 vs. 38.7°F), 2 (35.8 vs. 38.7°F) and 3 days (35.2 vs. 38.8°F) before calving than the corresponding non-calving dates ($P < 0.05$), but fall minimum temperature was higher 1 (55 vs. 52.3°F), 2 (55.4 vs. 52.5°F) and 3 days (55.6 vs. 53.1°F) before calving than the corresponding non-calving dates ($P < 0.05$).

In conclusion, for spring-calving cows, an increase in barometric pressure and a decrease in maximum and minimum temperature were associated with calving. The authors pointed out that during the early spring, departing storm fronts will often be followed by a trend toward more tranquil weather and increasing barometric pressure which may include clearing and colder conditions. In this study, this type of weather pattern appeared to influence the incidence of beef cows calving in the spring. In fall-calving cows, an increase in maximum and minimum temperature with no barometric pressure relationship was associated with day of calving. This suggests that warmer temperatures may influence calving in the fall. In summary, these data suggest that monitoring weather conditions may provide an indication of calving incidences and possibly prepare producers to monitor cows.

¹ Romano, J. E., J. A. Thompson, D. C. Kraemer, M. E. Westhusin, M. A. Tomaszewski, and D. W. Forrest. 2011. Effects of early pregnancy diagnosis by palpation per rectum on pregnancy loss in dairy cattle. *J. Am. Vet. Med. Assoc.* 239:668-673.

² Troxel, T. R., M. S. Gadberry, D. Hubbell, and W. Kellogg. 2011. The relationship between climatic conditions and the incidence of calving. *J. Anim. Sci.* 89 (E-Suppl. 1):418 (Abstr.).

³ Troxel, T. R. and M. S. Gadberry. 2011 (in press). Relationships of barometric pressure and environmental temperature with incidence of parturition in beef cows. *J. Anim. Sci.* jas.2011-4088; published ahead of print December 6, 2011, doi:10.2527/jas.2011-4088. Available: <http://jas.fass.org/content/early/2011/12/01/jas.2011-4088.full.pdf+html>.