

**Plasma pregnancy specific protein B (PSPB) in days 25, 26 and 28 in two beef cattle breeds**

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Extensive beef cattle farming systems are progressively implementing new methods to make more technical the production cycle. Detection of pregnancy specific protein B (PSPB) could be an accurate and early pregnancy diagnosis to reduce the calving interval. The aim of this study was to determine, based on PSPB concentrations, the earliest day to accurately diagnose pregnancy in beef cows. Seventy-four lactating Parda de Montaña and 40 Pirenaica multiparous cows were synchronized and inseminated on day 75.8±13.5 postpartum. Plasma EDTA samples were obtained on days 25, 26 and 28 post insemination and PSPB ELISA assays were performed. Pregnancy diagnosis was confirmed by transrectal ultrasonography on day 37 post insemination. No differences in PSPB concentrations were found in non-pregnant cows among different days (0.67, 0.41 and 0.48 ng/ml on days 25, 26 and 28, respectively). In pregnant cows, PSPB concentrations were similar on days 25 and 26, but on day 28 the highest values were recorded (1.15, 1.22 and 1.82 ng/ml on days 25, 26 and 28, respectively). For pregnancy diagnosis at day 25, the area under the ROC curve was 0.755, but no cut-off value was proposed because of the overlap between pregnant and non-pregnant PSPB values. On days 26 and 28, the area under the curve was 0.880 and 0.930 respectively, but no significant differences were found between the logistic models. The optimum cut-off value for pregnancy discrimination was 0.57 ng/ml (94.3% of sensitivity and 78.9% of specificity) and 0.91 ng/ml (94.3% of sensitivity and 80.8% of specificity) on days 26 and 28, respectively. In conclusion, plasma PSPB analysis on day 26 was a reliable tool for early pregnancy diagnosis in beef cows, with a similar accuracy to that obtained on day 28 and avoiding the lack of precision obtained on day 25.

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