Comparison of transcutaneous ultrasound over the right flank with transrectal ultrasonography in the diagnosis of pregnancy in New Zealand dairy herds

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Abstract:

Application of a 3.5 MHz sector transducer over the right flank allows the rapid and clear visualization of bovine pregnancy (ie: fetus, fetal membranes, fetal fluid and/or placentomes). A total of 1736 cows in ten commercial, pasture-based New Zealand dairy herds were examined for pregnancy by transcutaneous ultrasound across the right flank and transrectal ultrasound between 37 and 198 days of gestation. The gold standard was derived from calving records or examination at slaughter. The overall sensitivity of transrectal ultrasound (96.24%) was markedly higher than flank ultrasound (58.55%) and the overall probability of a correct diagnosis of pregnancy status was also significantly higher ($p<0.0001$). From 155 days of gestation, however, flank ultrasound represented a more accurate method of pregnancy diagnosis and the probability of a correct diagnosis was significantly higher ($p<0.0001$) after this gestational age.

The gestational age of 225 cows from four Spring-calving dairy herds was determined and ultrasound pregnancy test recorded, to determine possible fetal characteristics able to be visualized via transcutaneous ultrasound over the right flank in order to age pregnancy during mid to late gestation. Linear or quadratic equations and curves were formulated from 60 to 198 days of gestation. The fetal characteristics of thoracic diameter, abdominal diameter or umbilical diameter can be used to age pregnancy from 60 days of gestation. Placentome height and length were not significant in the determination of gestational age.

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