

IDEXX Bovine Pregnancy Test – A New Tool for Accurate and Early Pregnancy Diagnosis in Cattle

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Introduction

Accurate and timely detection of pregnancy in dairy cows is an essential component of today's reproductive management programs. Veterinarians and farmers use early detection of non-pregnant (open) cows to enable faster rebreeding and shorten the calving interval, thereby maximizing milk production and revenue for the farm. IDEXX Laboratories, Inc. has developed an ELISA for the accurate detection of pregnancy as early as 28 days post breeding, providing veterinarians and dairy farmers with another tool for the early identification of open cows.

Materials and Methods

The IDEXX Bovine Pregnancy Test detects the presence of early pregnancy-associated glycoproteins (PAGs) in bovine serum or EDTA plasma as a marker for pregnancy in cows. This study was conducted to evaluate the sensitivity and specificity of the IDEXX Bovine Pregnancy Test in dairy and beef cows and heifers, starting at 28 days after insemination and/or 60 days after calving. Serum and EDTA plasma samples were obtained from multiple sites in the US as well as Beijing, China. Trans-rectal ultrasound was also performed at day 28 or later to confirm the pregnancy status of bred cows. A total of 1181 serum samples and 1214

EDTA plasma samples were tested on the IDEXX Bovine Pregnancy Test following the package insert protocol.

Results

In this evaluation, the sensitivity of the IDEXX Bovine Pregnancy Test was greater than 99% when testing either serum or plasma taken from pregnant animals at least 28 days after insemination. Specificity was 93.8% for serum and 95.1% for plasma samples taken from heifers or from cows at least 60 days post calving. Additional analysis of the data shows that after calving, the IDEXX ELISA detects a rapid decline in PAGs, and by 50 days after calving the assay values returned to baseline. Specificity was 100% for serum (n=227) or plasma (n=205) samples taken 50-200 days post-calving.

Significance

This evaluation of the IDEXX Bovine Pregnancy Test indicates that the test can be a useful adjunct to existing reproductive management programs. It offers a reliable method to distinguish between pregnant and open animals at 28 days after breeding, and throughout the course of pregnancy. As with any diagnostic test, the IDEXX Bovine Pregnancy Test should be used under the guidance of a veterinarian as part of the farm's overall health and reproductive management program.