

Efficacy of ECF Dipstick Test for Determination of Nonpregnancy in Dairy Cattle

J.D. Ambrose¹, B. Radke, P.A. Day, M. MacLean

Alberta Agriculture Food and Rural Development, 9th Floor, 6909-116 Street, Edmonton, AB T6H 4P2. ¹E-mail: divakar.ambrose@gov.ab.ca

Take Home Message: The ECF test, in its presently marketed form, is unreliable for early determination of nonpregnancy and is not recommended for use by producers as a reproductive management tool.

The Early Conception Factor (ECF) dipstick test (Concepto Diagnostics, Knoxville, TN) is currently marketed as a tool for early identification of nonpregnant cows. According to some reports the test is over 94% accurate in identifying nonpregnant cows. However, there are other reports indicating that the ECF test may not be a reliable diagnostic test. We recently completed an on-farm project that evaluated the efficacy of the ECF test in determining nonpregnancy in dairy cattle.

Two trials were conducted evaluating the test using serum and milk samples obtained from about 200 dairy cows. In Trial A samples were collected from 28 cows on Day 0 (immediately prior to insemination) and at 7, 14, 21 and 28 d after insemination. Results of the ECF test from 10 cows were read by two individuals to determine between-reader agreement. The true pregnancy status was confirmed by ultrasound on Day 28. ECF test results from all 28 cows were used to calculate the repeatability of negative results (ability to consistently identify a nonpregnant cow as nonpregnant every time) when tested over a period of four weeks.

Between-reader agreement was higher than 86%, but only 17 of 28 milk samples and 6 of 28 blood samples taken prior to insemination yielded a negative ECF test result. Only two of the 13 nonpregnant cows consistently tested negative to a serum ECF test at all five test times. When milk sample was used, none of the 13 nonpregnant cows was consistently identified as nonpregnant.

In Trial B, milk and serum samples were obtained from 163 cows at 14 d after insemination and at the time of pregnancy diagnosis by the herd veterinarian at approximately 40 d after insemination. There was about a 60% agreement between results of milk and blood tests performed 14 d after insemination. The probability that a cow can be correctly identified as not being pregnant using the ECF test is only about 50%.

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