

# The Sensitivity and Specificity of Commercially Available Cowside Milk Progesterone Tests

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The levels of progesterone in milk have been determined to accurately reflect the secretory activity of the corpus luteum in the cow. As an adjunct to rectal palpation the measurement of progesterone may be used to aid the diagnosis of reproductive abnormalities, pregnancy or return to estrus. Commercial kits utilizing the rapid enzyme-immunoassay (EIA) technique are being produced, which will allow veterinarians and producers to test milk progesterone levels at "cowside."

The primary objective of this trial was to determine the sensitivity and specificity of four commercially available cowside milk progesterone tests for prediction of non-pregnancy and return to heat. A second objective was to determine the ease of use, the testing time required and hence the potential acceptance of these kits for practical use.

Milk samples were collected from 250 cows in twenty dairy herds at 19 or 20 days post breeding. Each sample was tested with the four test kit methods to determine progesterone levels.

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The technician was blinded as to sample identity to maintain objectivity in assessment of test outcome. All samples were preserved and tested quantitatively for progesterone levels using an EIA microtitre plate reader. Pregnancy rate was determined by rectal palpation at 45-60 days post-breeding and confirmed by calving date. Data was collected on factors such as cow age, service number, calving to conception interval and herd of origin.

The four kits included in this project were "Progestassay" (Pitman-Moore), "Ovucare" (TechAmerica), "Calfcheck" (American Diagnostics) and "Visi-check" (Joldon Diagnostics). Subjective assessment of practicality of use is complete. Two factors were found to be important. The time required for testing ranged from 10 minutes (Calfcheck) to 45 minutes (Ovucare). The number of steps involved per test ranged from 5 (Ovucare & Calfcheck) to 12 (Progestassay).

Currently, statistical analysis is being conducted to evaluate test kit accuracy. Complete results will be available in May 1987. The findings of this trial are important for assessment of the future usefulness and practicality of milk progesterone testing in dairy herd reproductive management.

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