

Advanced Equine Theriogenology Course

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Regarding Hormone Assay Kits

Hormone assays can be a very useful tool for the busy equine practitioner. The purpose of this report is to talk about hormone assay kits for analysis of progesterone, estrone sulfate, and equine chorionic gonadotropin.

The first kit chronicled here will be one for progesterone assessment. Knowing relative progesterone levels enables monitoring of ovarian function, giving this assay a wide range of practical applications in theriogenology. There are several progesterone kits available. Interestingly enough, it seems that progesterone assays were originally developed for the cow and were later adapted to use in the mare. There have been some reliable "mare side" assay kits developed, but due to limited acceptance by the veterinary profession, few are available on the market. Here are those that are available:

Mare Progesterone Assay Kit, made by Novo Nordisk of Cambridge, England

Enzygnost Serum Progesterone Test Kit Vet made by Behring Diagnostics of Sydney, Australia

These kits are one and the same. This is a quantitative/semiquantitative test using a well plate and Standards. Each test can be run for around 3 to 9 dollars per sample, using serum or plasma. Advantages are that it can be run in an hour and the cost is not terribly prohibitive. Disadvantages are that it requires a microtiter plate to read results and takes five steps to do.

Target Equine Progesterone Assay Kit made by Bio Metallica of Princeton, New Jersey

A semiquantitative test using whole blood, milk, serum or plasma. This is a great kit because it costs about 6 dollars a result and takes only 15 minutes. The only disadvantage is that the result is read by a subjective interpretation of how dark blue the solution is.

CITE Semi-Quant Progesterone Assay made by the IDEXX Corp. of Portland, ME

A semiquantitative test using whole blood, serum, or plasma. Costs about \$7.90 per test, takes about 10 minutes to run. Advantages are that it's quick and cheap, but the disadvantage is that interpretation is somewhat subjective.

Bioresearch Ireland Progesterone Assay Kit made by Wien Laboratories Inc of Succasunna, NJ

A sandwich type ELISA, this test costs from about \$2 to \$13 per test. There are really no advantages, because this test takes more steps than the others and takes 2.5 to 3 hrs to run, as well as requiring a plate reader.

The next hormone kit to talk about is that for analysing estrone sulfate levels. Potentially, monitoring of this hormone could lead to sensitive indication of fetal viability. There is only one commercially available estrone sulfate assay kit:

Bioresearch Ireland Equine Oestrone Sulphate EIA made by Wien Laboratories, Inc, of Succasunna, NJ

Requires a plate reader for results, so this makes the test expensive, Probably more practical just to send samples to a lab for evaluation.

The last assayed hormone to discuss is equine chorionic gonadotropin (eCG). Historically used as a pregnancy indicator, this hormone is not assayed as much now due to use of ultrasonic pregnancy diagnosis and the more accurate analysis of estrone sulfate.

Bioresearch Ireland Equine eCG/PMSG EIA made by Wien Laboratories, Inc or Succasunna, NJ
Sandwich type ELISA costs from 3 to 17 dollars per test. Takes 2 to 3 hours to do and requires special equipment, making it unpractical for a practicing veterinarian.

Rapi Tex PMSG made by Behring Diagnostics of Sydney Australia
Agglutination test. Advantages are that it can be read by eye and doesn't take terribly long to do.
Disadvantage is that it costs at least \$20 per test.

REFERENCE

McKinnon and Voss: Equine Reproduction. 1993. Lea and Febiger, Malvern PA