

# *Frequently Asked Questions about*



**BioPRYN**<sup>®</sup><sub>wild</sub>



**Q. What is BioPRYN?**

A. BioPRYN is a blood pregnancy test for ruminants, and has specific appeal for the livestock industry, because it delivers fast, accurate, safe and economical pregnancy diagnostic results.

**Q. How does BioPRYN<sub>wild</sub> detect pregnancies?**

A. BioPRYN<sub>wild</sub> uses enzyme-linked immunosorbent assay (ELISA) technology to evaluate the blood (more specifically, the serum or plasma) of ruminants for a protein called Pregnancy Specific Protein B (PSPB). PSPB is produced by the placenta, and therefore pregnant animals will have the protein in their blood. This makes the test more accurate than earlier attempts at pregnancy diagnosis that evaluated blood or milk for progesterone or other hormones that can occur in normally cycling animals.

**Q. How early in a pregnancy can animals be tested with BioPRYN<sub>wild</sub>?**

A. Deer and elk can be tested for pregnancy using BioPRYN<sub>wild</sub> any time after 40 days of gestation. BioTracking has been testing deer and elk samples mailed to the laboratory from herds throughout North America. Breeders have been satisfied with the test. When breeders send samples too early in the breeding season, some are not 40 days into pregnancy and animals will be called not pregnant. Care must be taken to assure that 40 days have passed since conception. In artificial insemination situations, timing is known. If males are away from the female for 40 days, this is a good time to test.

**Q. What is the accuracy of BioPRYN<sub>wild</sub>?**

A. A study was conducted in fallow deer (*Dama dama*) by Willard et al., (J. Anim. Sci 77:32, 1999) in which pregnancy testing by ultrasound and PSPB were compared. At 30 days after buck removal, the two tests agreed 96.6% of the time. At 90 days agreement was 100% in mature and 2-year old does. Both ultrasonography and the blood testing methods could have contributed to this slight error. An advantage of using BioPRYN<sub>wild</sub> over ultrasonography is that detection can be done based on a blood sample, whereas ultrasonography requires that an experienced technician be present on-site. A drawback of blood testing is a delay in obtaining results. However, the BioTracking lab conducts tests biweekly and results are available on the weekend of the test week.

To give a better idea of the accuracy of the test, results in cattle that had been bred from 0 to 60 days prior to slaughter were examined. Blood was collected at time of slaughter and

the uteri were examined for presence of an embryo or fetus. If the conceptus was not discernable by observation, the reproductive tract was flushed and fluid was searched under a microscope. Of 187 cows determined not pregnant by uterine examination, the PSPB test was 94.7 percent correct in calling cows not pregnant. Of 242 detected pregnant by uterine examination, those less than 25 days into pregnancy were detected correctly at 15.7 percent. However, if they were 25 days or more in pregnancy, the PSPB assay was 99 percent correct (Mauer et al., J. Anim. Sci. 61:390, Suppl. 1. 1985). Examination of the reproductive tract is the sure way to know if the animal was pregnant; however, such a study is not practical in highly valued deer and elk, which are rarely culled in large numbers. Accuracy in deer and elk is only confirmed by birth of a live offspring.

**Q. How much does BioPRYN<sub>wild</sub> cost?**

A. The test itself costs \$25.00 plus the cost of a sample tube and needle and shipping to the BioTracking laboratory.

**Q. What are the advantages of using BioPRYN<sub>wild</sub> versus other methods of pregnancy diagnosis?**

A. The deer and elk breeder often would like to know if an animal is pregnant. Valuable animals become even more valuable with this information. Knowing pregnancy status can also provide a means for selection of alternate feeding, breeding and parturition management schemes for the herd. A female that has not delivered young the previous year or so may be permanently sterile. Waiting to cull until the next calving season wastes valuable resources. Extended birthing seasons are always a concern because females require special attention. If an animal is expected to give birth and hasn't, the question of whether she is just late or is not pregnant comes up. A pregnancy test at this time is helpful.

Pregnancy testing in the young female is important because pregnancy rates are lower. The skilled manager has an opportunity to increase profit by working with these animals. Young deer and elk in poor body condition will not reach puberty in time for the breeding season and will not become pregnant. Those with adequate growth can get pregnant; however, as a group it will be at a lower pregnancy rate than in older animals. Even so, puberty and conception are often late in the breeding season. Here is where pregnancy testing is desirable and it can be applied once they are 40 days after conception. During the parturition period, the manager can concentrate attention on those known to be pregnant and eliminate concern for others.

**RECTAL PALPATION** - This technique has been used by cattle managers for many years. It is used in deer and elk and consists of inserting the hand and arm into the rectum and feeling the uterus through the rectal wall. The technician feels for presence of the fetus or fetal membranes. In cattle this can be applied at 35 or later days in pregnancy. Deer and elk pregnancy can also be detected near this time in gestation. The technique is highly reliable at various stages of pregnancy. Error is greater at 35 days compared to 40 or 50 days after conception. The size of the rectal opening of the deer and size and of the hand and arm of the technician can limit testing and may result in undue stress for the animal.

ULTRASONOGRAPHY - Success depends upon the skill of the operator, the type of instrument in use, and the animal to which it is applied. Real-time scanning of the uterus, in which an image is displayed on a video monitor, allows the operator to make a precise and accurate decision. In ruminants, including deer and elk, the conceptus is a filamentous structure during the first three to four weeks of age and contains little fluid. Until fluid accumulates, ultrasound cannot reliably detect the conceptus. A high degree of accuracy in cattle is not obtained until the third to fourth week of gestation. If an embryo/fetus is observed on the monitor, the animal is called pregnant with high accuracy. If an embryo/fetus is not observed, she is called not pregnant and accuracy is less because the probe may not have been positioned correctly for detection of the existing conceptus. Producers in New Zealand are actively using ultrasound for testing for pregnancy in red deer.

**Q. How long does it take to receive the test results?**

A. The BioTracking lab conducts tests biweekly and results are available on the weekend of the test week. The assay takes three days to complete. Results are emailed, faxed, phoned or mailed to the producer.

**Q. How should blood samples be prepared and shipped?**

A. The veterinarian or producer needs to draw blood samples from the jugular vein, which is an easy-to-learn procedure. Blood samples of at least 5 mL per animal should be collected in individual red-topped vacuum tubes and labeled with each animal's identification number. It is important to draw samples using individual, disposable needles, to avoid cross-contamination between animals. Needles and tubes can be obtained from veterinarians or veterinarian supply companies.

Tubes containing blood samples should not be opened and should be placed in a sealed baggie and wrapped in bubble wrap or newspaper and packed in a well-padded box to avoid breakage. They do NOT need to be packaged in ice. Samples may stay in transit for several days without compromising the results of the test. Fastest results, however, are achieved when the samples are shipped via Federal Express, UPS overnight, DHL, U.S. postal service overnight, or other overnight carrier method.

**Q. Who manufactures BioPRYN<sub>wild</sub>?**

A. R. Garth Sasser of BioTracking, LLC developed the BioPRYN test using technology licensed from the University of Idaho. BioTracking LLC is the sole manufacturer and distributor of BioPRYN. Garth Sasser developed the licensed technology while a researcher and faculty member at the University of Idaho.

BioTracking LLC and over 20 affiliate laboratories located across the United States conduct the BioPRYN test for beef and dairy cattle producers who deliver samples. However, the BioPRYN<sub>wild</sub> test, and the goat and sheep tests are only conducted at the BioTracking laboratory.

**Q. How can a producer get started using BioPRYN<sub>wild</sub>?**

A. Producers should contact BioTracking LLC at 1.866.876.9736. BioTracking LLC will set up an account, provide detailed shipping instructions and establish a system for returning results to the producer.

**Q. To whom is the test available?**

A. Thanks to the availability of efficient shipping methods, BioTracking LLC can process samples from producers throughout the United States and internationally. Veterinarians who serve deer and elk farmers also may wish to regularly pool samples from several herds and ship them for processing.

**Q. Where can I find more information about BioPRYN<sub>wild</sub>?**

A. To learn more about BioPRYN<sub>wild</sub> contact BioTracking, LLC, 208/882-9736, email: [biotracking@biotracking.com](mailto:biotracking@biotracking.com). See the website at [www.biotracking.com](http://www.biotracking.com) for more information.