Why Is Progesterone Your Most Important Tool?

You have completed the health testing.

You have researched the pedigrees.

You have chosen the stud.

You know that his contribution to the breed is good.

But when is the best time to breed? How do I know?

Why Are Progesterone Levels Important in Breeding?

When breeding dogs, timing is critical. Progesterone testing provides definitive and valuable information by pinpointing the ideal mating window, ensuring sperm and eggs meet at the right time for conception. In dogs, progesterone levels rise before ovulation and remain elevated throughout pregnancy. Understanding these patterns helps breeders schedule natural mating, artificial insemination, or even elective C-sections with precision.

What Is Progesterone and How Does It Affect Fertility?

Progesterone is a reproductive hormone produced by the ovaries. Its role is to prepare and maintain the uterus for pregnancy. In the canine reproductive cycle, progesterone:

- ✓ Rises just before ovulation
- ✓ Remains high during pregnancy
- ✓ Supports embryo implantation and development

Dogs differ from many mammals — they ovulate as progesterone rises and estrogen declines. This means progesterone testing is more reliable than behaviour alone when identifying the fertile period.

How Are Dog Progesterone Levels Tested?

Progesterone testing involves a simple blood sample analyzed in a veterinary laboratory. Many clinics use in-house equipment. At **Trinity Hills Pet Hospital** we use the IDEXX Catalyst machine for reliable and fast results.

Results are usually available within 20 minutes. Units can be reported in **nmol/L** (nanomoles per litre) (Canada), or **ng/ml** (nanograms per millilitre) (generally in the US).

What Are Normal Dog Progesterone Levels?

Typical ranges in **nmol/L** from IDEXX laboratory:

Anestrus (not in heat): < 3 nmol/L (< 1.2 ng/ml)

Late Proestrus: 3.2-6.3nmol/L (1.00–1.98 ng/ml)

Luteinizing hormone (LH) surge: 6.4–9.5 nmol/L (2.01–2.99 ng/ml)

Post Luteinizing hormone (LH) surge: 9.6–15.8 nmol/L (3.0–4.97 ng/ml)

Ovulation: 15.9–38.2 nmol/L (5.0–12.0 ng/ml)

In **ng/ml**, baseline levels are < 1.0 ng/ml until just before the LH surge. Ovulation generally occurs around **5 ng/ml**.

When Should You Start Progesterone Testing?

Begin testing around **day 5–6 of the heat cycle**. The results will direct us on when to repeat, until levels indicate the LH surge and ovulation. The fertile window can then be calculated based on semen type:

- **Natural breeding or immediate Artificial Insemination:** 1 and/or 2 days post ovulation
- **Fresh chilled semen:** 3 and/or 4 days after ovulation
- **Frozen semen:** 3 and/or 4 days ovulation

Can You Breed Too Early or Too Late?

Yes. Eggs take **48-96 hours after ovulation** to mature. Breeding too early means sperm may die before eggs are ready. Breeding too late reduces the chance of conception, especially with semen types that have shorter viability (frozen semen survives less than 24 hours). If using Artificial Insemination, many breeders have 2 rounds of AI to ensure the best chance of successful breeding.

How High Should Progesterone Be to Confirm Ovulation?

Ovulation can vary between 16-35 **nmol/L**, but it is the curve (complete picture of all progesterone results), that is the most important to look at. Inseminations are often timed when levels spike past the ovulation range to ensure ovulation is complete and hormone levels can maintain a pregnancy.

Can Progesterone Testing Predict Whelping Dates?

Yes. Once ovulation is confirmed, whelping generally occurs **63 days later**. Knowing the ovulation date also helps breeders plan elective C-sections at the safest time for both the dam and the puppies.