“Reproductive Health of Your Stud Dog”

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Introduction

- Importance of reproductive health in stud dogs - fertility of the stud dog and/or quality of the frozen semen has a direct impact on litter size and therefore on the diversity and overall health of the gene pool, particularly in a small breeding population.
- Role of the stud owner in canine breeding programs - the stud dog owner may not be listed as breeder on the litter, but they still play a vital role in promoting good breeding practices — responsible for:
    - Disclosure of health or temperament issues
    - Care of your stud dog to prevent the spread of bacterial/viral infections
    - Avoiding “popular sire effect”/overuse
    - Mentorship

Preventive Health Care

- **Regular veterinary reproductive exams** - choose a good breeder vet who understands and supports your intact male. Utilize the “Breeder-Friendly Veterinarians List” on Facebook.
- **Vaccination and parasite control** - endoparasites & ectoparasites. No, oral flea/tick preventatives are not decreasing fertility - there is no evidence for this. Lyme disease, ehrlichia, Rocky Mountain Spotted Fever, or Anaplasma certainly will.
- **Health testing** - up-to-date testing based on the breed club’s CHIC recommendations. This was an interesting thing to watch evolve through this stud dog catalog because our recommendations have changed over time and many people elected to complete additional testing.

Evaluating Fertility and Breeding Soundness

A **breeding soundness exam (BSE)** in a dog is a veterinary evaluation used to determine whether a male dog (stud dog) is physically and reproductively capable of successfully breeding and producing healthy offspring.

Breeding Soundness Exam (BSE)

General Physical Examination

The veterinarian evaluates the dog's overall health & condition, including body condition and weight.

Reproductive Examination

The reproductive organs are carefully examined, often using ultrasound:

- Testicles checked for:
    - Size
    - Symmetry
    - Firmness
    - Proper descent into the scrotum
- Penis and prepuce examined for abnormalities or injury
- Prostate evaluated for enlargement, infection, or cysts

Semen Collection and Analysis

The collection is evaluated for:

- **Libido** — how well readily the dog collects (swab, bitch present, or bag only)
- **Volume of collection** — amount of semen produced
    - Common myth - more is better?
- **Sperm concentration** — number of sperm present per mL
- **Motility** — how many are moving?
- **Progressive Motility** — how many are moving forward?

- **Morphology** — percentage of normal-shaped sperm
    - Not bent or broken heads, coiled tails, hairpin turns, etc.
    - A note on “clumping” / ability of computer to read the sample

4. Infectious Disease Testing

Stud dogs are often screened for Canine Brucellosis prior to live cover breeding OR semen freezing for international shipment. Another potential requirement - for Australia for example - is that the dog be vaccinated for or tested for Leptospirosis.

Brucellosis can cause infertility, abortion in females, and kennel outbreaks. This is a sexually transmitted disease in the dog. It is also “reportable” to the USDA and zoonotic (contagious to people). Thankfully, it is uncommon - for example, a larger issue in cattle due to range overlap with the American Bison.

When Should a BSE Be Done?

- Before a planned breeding
- If fertility problems are suspected
- After illness, injury, heat stress, or long periods without breeding

Why It Matters

A breeding soundness exam helps:

- Detect fertility problems early
- Improve conception rates
- Reduce transmission of genetic or infectious diseases
- Protect the health of both the stud and female dog
- Support responsible breeding practices

A dog can appear healthy and still have reduced fertility, which is why semen evaluation is especially valuable.

Nutrition and Physical Conditioning

- Importance of balanced nutrition
- Maintaining ideal body condition score
- Exercise and cardiovascular fitness

Common Reproductive Problems in Stud Dogs

- Low sperm count or poor motility
    - A multitude of reasons for this - including physiologic stress.
- Prostatitis and enlarged prostate -
    - Finasteride as a long-term medication for management and alternative to neutering
    - Discontinued 3 days prior to collection for AI or freeze
- Testicular abnormalities:
    - **Cryptorchidism** - full (2 abdominal testicles anywhere from the kidneys to the inguinal ring), monorchid (1 abdominal testicle), or inguinal. These dogs should NOT be bred - these are highly heritable conditions.
    - **Testicular tumors** - tend not to metastasize, but the testicle should be removed when the tumor is detected. A second healthy testicle may be left and fertility can be maintained.
- **Bacterial infection** - semen can be cultured for the same “bugs” that we find on vaginal cultures. Often this can be an issue if dogs are on the road for long periods of time, and have lots of exposure. Often a course of oral antibiotics after culture with susceptibility is sufficient to resolve this, but these issues can become chronic or resistant and hard to eliminate.
- **Injuries, illness, heat stress affecting fertility** - e.g. testicular torsion, fever, dehydration, heat stroke - roughly 60 days to regenerate

A note on vasectomies - this is a great option to prevent unwanted breedings, particularly between related dogs within a home. The hormones are maintained, but so are behaviors - this will NOT help in any way with reactivity. This dog will still breed & tie a bitch, but she should not get pregnant.

Semen Shipping & Freezing

- Option 1: he travels for live cover or side-by-side AI (vaginal, TCI, sx)
    - NOT capacitated, semen requires 24-48 hours to “mature” in the bitch prior to having the ability to fertilize an egg. Inseminations should begin just after confirmed ovulation. Fresh semen is capable of surviving 5-7 days in the bitch’s reproductive tract.
- Option 2: she travels
    - Same as above.
- Option 3: chilled shipment overnight with extender for next-day use, *sometimes* good for 48 hours, but no longer than that.
    - Capacitated - already ready to fertilize an egg - therefore insemination should occur ~48 hours after confirmed ovulation.
- Option 4: semen frozen with liquid nitrogen for long-term storage
    - Capacitated - already ready to fertilize an egg, but only survives for ~12 hours in the bitch’s reproductive tract - therefore insemination should occur 60-72+ hours after confirmed ovulation.

Mythbusters!!!

1. Oral preventative products are reducing fertility
    a. There is no evidence for this.
    b. Endoparasites & diseases transmitted by ectoparasites will reduce fertility
        i. Lyme disease, anaplasmosis, canine ehrlichiosis, rocky mountain spotted fever, etc.
2. You have to wait until a dog is fully mature & health-tested to freeze semen
    a. Freeze early and on several separate occasions, even considering storing at multiple different facilities
    b. Stored semen from a dog that develops a health issue or fails health testing can be destroyed
    c. Semen quality at the time of freezing directly impacts utility of this sample up to 40 years later