

# Artificial Insemination of Canines

By

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Johnson Farms Mastiffs

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## Artificial Insemination Methods

There are three (3) main methods of Artificial Insemination (AI):

1. Vaginal Insemination;
2. Trans-cervical Insemination [TCI] also commonly known as uterine insemination; and
3. Surgical Insemination.

**Vaginal Insemination** is done by taking the semen collected from the Male and depositing the semen in the female's vagina. This is done by inserting a pipette into the female's vagina, depositing the semen in front of the cervix (not through the cervix). The female's hindquarters are recommended to be elevated for 15 minutes after the procedure to increase the conception rate. Fresh or chilled semen is optimal for this method of insemination. This can be done once; but to have a better probability of pregnancy, a second vaginal insemination is often done two to three (2-3) days after the first vaginal insemination. Breeders often perform the procedure themselves. Vaginal Insemination offers **average conception rate**.

**Trans-cervical Insemination** (TCI) is done by inserting a catheter through the vagina and through the cervix and depositing the semen directly into the uterus canal just below the horn of the uterus. This procedure uses an endoscope (camera on the catheter to see cervix and guide the catheter through the cervix into the uterine canal). This procedure is usually done once but can be done two to three (2-3) days after the first TCI. TCI offers the **second highest conception rate**.

**Surgical Insemination** is the most invasive breeding method and requires anesthesia. For surgical insemination, a veterinary surgeon:

- makes an incision in the female's abdomen;
- locates the uterus; and
- the semen is then injected into the uterus.

Surgical Insemination offers the **highest conception rate** but also presents the most risk to the mother. To minimize the risk to the mother, it is recommended that the veterinary surgeon performing the procedure routinely performs this procedure daily as to only few times a month. Johnson Farms uses Surgical Insemination for breeding its females. For over 30 years, Johnson Farms Mastiffs has used Companion Animal Clinic in Gainesville, Virginia whose Senior Surgeon and founder is Dr. Robert S. Dove, DMV, a nationally renowned expert in all three artificial insemination procedures and canine reproductive health, surgery, and pediatric veterinary medicine.

# Semen Types

There are three (3) types of semen used in AI:

1. Fresh Semen;
2. Chilled Semen; and
3. Frozen Semen.

Once collected, breeding use time (time from semen collection to inserting into the female) of the different semen has the following three (3) effective “breeding use times” when stored with a canine chemical extender added:

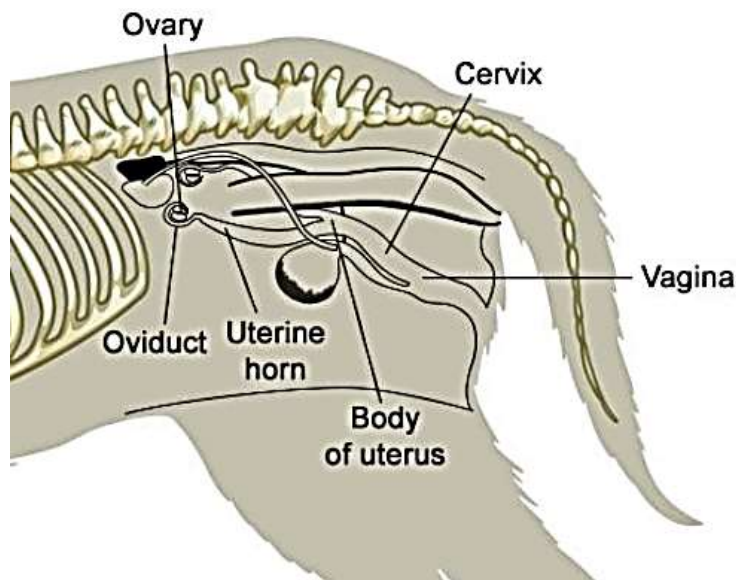
1. Fresh Semen – 12 hours at room temperature;
2. Chilled Semen – 4 days (kept chilled at 5°C); and
3. Frozen Semen – basically indefinite if stored at a temperature of -196°C.

Survival time of semen once in the female’s reproductive track is:

1. Fresh Semen – 7 Days;
2. Chilled Semen – 2 Days; and
3. Frozen Semen – 6 hours after thawed.

## NOTES:

- Once the Fresh Semen and/or Chilled Semen enters the uterine canal (canal between the cervix and the uterine horn) the semen swim in a straight line. Once the Fresh Semen and/or Chilled Semen reach the uterine horn, the semen swim in a spiral motion increasing the chance of intercepting an egg in the two (2) oviducts.
- If Frozen Semen is used TCI, the semen swims in a spiral motion all of the time (from the cervix to the uterine horn, thus reducing percentage of semen reaching the horn. Johnson Farms Mastiffs recommends surgical insemination if using frozen semen.



## Recommended Semen Types for AI

Johnson Farms Mastiffs recommends the following semen type used for Artificial Insemination:

1. Vaginal Insemination – Fresh Semen and/or Chilled Semen;
2. Trans-cervical insemination [TCI] – Fresh Semen and/or Chilled Semen; and
3. Surgical Insemination – Fresh Semen and/or Chilled Semen and/or Frozen Semen.

NOTE: Frozen Semen can be used for TCI but a smaller percentage of the live semen will reach the eggs for fertilization.

## Johnson Farm Mastiffs Breeding Practices

Due to the size of the Mastiffs and as a precaution to not injure the female and or male during breeding, Johnson Farms Mastiffs:

1. Only breeds its females by artificial insemination; and
2. Only provides Stud Service by artificial insemination (no natural breeding).

Due to the normal long whelping period (18-26 hours) of Mastiffs and the large puppies, Johnson Farms Mastiffs delivers its puppies by caesarian section. Johnson Farms Mastiffs has found that after a caesarian birth:

- The mother is not as exhausted after birth;
- A higher percentage of puppies live through the whelping process;
- The mother nurses and cleans the puppies immediately after anesthesia wears off; and
- There are no complication from afterbirth or a deceased puppy remaining in the mother after birth causing medical complications which can be life threatening.

**Canine Brucellosis** is a disease found in dogs and caused by the bacterium, *Brucella Canis*. Dog-to-dog spread of brucellosis occurs most often through breeding and by contact with vaginal discharges, semen, birthing fluids, and urine. Contact with an infected dog's blood, milk, saliva, and feces are less common sources of infection. Therefore a maximum of 3-days prior to breeding, Johnson Farms Mastiffs recommends that both the female and male should be tested for Brucellosis. NOTE: Brucellosis can spread from dogs to humans. This often occurs with contact of an infected dog's vaginal fluids during the whelping process. Breeders and veterinarians are at higher risk of contracting Canine Brucellosis. Human contact with a family pet's urine, saliva, and other bodily fluids from an infected dog do not normally transmit the disease to humans.