



Many of you may be familiar with Dr Ricardo Cervera who is a frequent visitor to many of the Weimaraner message boards on line. He is also a veterinarian and Weimaraner breeder/exhibitor in Mexico City, Mexico. He specializes in artificial insemination and was gracious enough to write this month's Health Matters column. It is interesting to note that A.I. breeding has become commonplace all over the world.

Artificial Insemination

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Abstract

Artificial insemination (AI) in dogs has increased in recent year. In dogs breeding is a usual habit all over the world. As breeders and veterinarians this is an issue to concern about.

Introduction

Since Lazzaro Spallanzani (1780) made important contributions such as first artificial insemination (AI) in dogs using fresh semen. Throughout time this procedure has been well developed in small animal reproduction.

Artificial insemination (AI)

Artificial insemination (AI) is the introduction of semen into a female's womb by any artificial method without mating.

This biotechnology may have complexity levels (moderate and high), from low to medium cost depending on the type of semen to be used (fresh, chilled or frozen). Each case provides different possibilities, it's always giving benefits to canine reproduction. Semen quality, proper use, time and technique in AI can give us high fertility levels.

The most commonly uses of AI are divided into: anatomical problems (weight, height, etc.) and problems

of behavior (aggressive temperament, inexperience, dominant females, etc.).

Advantages of AI:

- Animals do not have to be transported to stud for mating.
- Easy ways to transport and distributions of the semen.
- It increases reproductive efficiency of the studs (with an ejaculate it is possible to inseminate several females).
- Genetic improvement increases.
- Genetic mutations are not passed.
- Diseases are less likely to be spread.
- To obtain animals of already deceased males
- Size of the litter similar to the natural mating
- It allows to know the quality of the semen.

Disadvantages of AI:

- Fraudulent uses of the semen.
- If the male is not properly tested, the spreading of genital diseases will be increased.
- Requires well trained operations and special equipment.

AI can prevent the spread of genital diseases (Brucellosis, Herpes infection virus, TVT, etc.). It offers the possibility to use studs from all over the world and save valuable genetic material in sperm banks.

To accomplish AI, both specimens should be in an optimal health and female must be on her fertile phase.

However, there is different types of tools that help us to predict the time of ovulation, such as the EVC, measurement of progesterone and/or measurement of LH.

To know about the ovulation time its highly important to determine the optimal time for AI. And this is due the female oocytes are ovulated in an immature phase, as primary oocytes and they can not be fertilized immediately. Fertilization can occur only after the primary oocyte maturation and this happens up to 48-72 hrs after ovulation.

The fertilization period is the time in which the viable oocytes are in the oviducts and they turn into secondary oocytes, its viability last about 48-72 hrs, then they mature and ultimately degenerate. To improve the rate of pregnancy in the female, you must inseminate within 48-72 hours after ovulation.

The success of the AI in dogs is related to:

- Health and nutrition of the selected animals.
- Highest fertility rate in females.
- Uses and quality of the semen.
- Select the proper AI technique.

These requirements are the key to success that must be considered to reach a higher rate, otherwise will be a frustrating experience.

To know the quality of the semen it allows to estimate the probability of success in its use by doing the IA with fresh, cooled or frozen semen.

Types of AI:

- Vaginal artificial insemination
- Intrauterine artificial insemination

The choice of the technique will be according to the semen to be used (fresh, chilled or frozen).

Vaginal Artificial insemination

It's a simple technique which its developed with fresh or chilled semen.

The semen is deposited in the vagina of the female through a catheter length according to the size of the specimen, and the length of the vagina. The catheter is inserted through the lips vulval, avoiding the clitoris fossa, heading first towards dorsal to then direct you to cranial. Once the catheter is in the back of the vagina, sperm with the help of a syringe, then the character is removed and the female's hind limbs are raising up for a few minutes.

Intrauterine Artificial insemination

Intrauterine artificial insemination can be surgical or non-surgical (transcervical).

Transcervical intrauterine AI can be done through the catheterization of the cervix using catheters of 20 to 50 cm in length and 0.5 mm in diameter, with the tip protected by nylon, or with an endoscope for transcervical insemination. With the female in a position, the operator sets the cervix between your fingers through the abdominal wall, with the other hand introduces the catheter up to the region of neck, remove the nylon casing and penetrates the cervix to deposit in the body of the uterus. Catheterization of the neck can be done by viewing the cervix with the help of an endoscope. The female does not need sedation, the operator