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Invited presentation

Determining the optimal time of mating in bitches

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Abstract

The planning of mating time by timing the day of ovulation in the breeding bitch is important particularly because mating with the stud dog only once or doing an artificial insemination especially when using frozen semen. Clinical signs (vulvar edema, colour of vulvar discharge) or clinical techniques (vaginal cytology, vaginal endoscopy) are not accurately detect the ovulation time in bitches. Hormone assays (luteinizing hormone-LH, progesterone-P4) are commonly used to assess ovulation timing and therefore breeding time in the bitch. LH is secreted from pituitary gland and it reaches its peak level in the blood stream 48 hours before the ovulation. Increased LH level is used as a predictor of ovulation in bitches but this increase only lasts about 24-48 hours. For this reason, to detect LH increase there is a need for frequent blood sampling every 12 hours and this increases the costs. Oocyte is ovulated as a primary oocyte in bitches it need some maturation to become a secondary oocyte. The optimal time for fertilization 2-4 days after ovulation, when the oocytes are fully mature. If the availability of stud dog is limited or AI is intended the bitch should be bred 5th or 6th days after ovulation detection. Slight increase in P4 level after LH peak may lead to false ovulation timing in some bitches and should not be used. P4 test is a practical method for ovulation timing in the bitch whatever the breed. Ovarian granulosa cells initially secrete oestrogen after than starts to produce P4 with the pre-ovulatory LH peak. P4 level is 2.0 ng/mL and it reaches to 6.0 ng/mL during LH peak during ovulation. P4 assays fairly reliable to assess ovulation timing in bitches. This test can also be reliably used when the bitch in silent heat or do not pay attention to male dog. Other than LH and P4 tests, transabdominal ultrasonography and vaginal mucus crystallisation are other options for determining fertilization time in bitches.

Keywords: dog, breeding, ovulation, progesterone