University of Mosul
Lecture No.: 3
College of Veterinary Medicine
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Unit of Scientific Affairs
Website:

Lecture title: Superovulation in ruminants

Lecturer Affiliation: University of Mosul\ veterinary medicine

Summary:

Superovulation in ruminants

Superovulation: is release of multiple oocytes (eggs) during the single estrus period. Normally, Cow can produce a single egg during estrus period while the ewes releasing 1-2 ovum. in these technique (Superovulation) the animal will produce many (5-10) eggs during estrus period.

❖ Indications

1. Preparation for embryo transfer programs.
2. Increase percentage of twins or triple in sheep (Economic).
3. for research purposes.

❖ Principles of superovulation:

1. Stimulate extensive follicular development (follicular wave) through the use of specific hormones.
2. Obtain maximum number of oocytes to fertilization prior embryos transfer.

❖ Factors affecting superovulation response:

1. Physiological status of the animal.
2. Age.
3. Breed.
4. Nutrition.
5. Body condition.

❖ **The main hormones which use in superovulation:**

1. The follicle-stimulating hormone (FSH).
2. Pregnant mare serum gonadotropin (PMSG).
3. Human menopausal gonadotropin (HMG).

➢ **Other hormones which use in superovulation programs**:

❖ The Prostaglandin (PGF2α).

❖ progesterone : controlled internal drug release (CIDR) or sponge (in ewes & doe).

➢ **Protocols or programs**

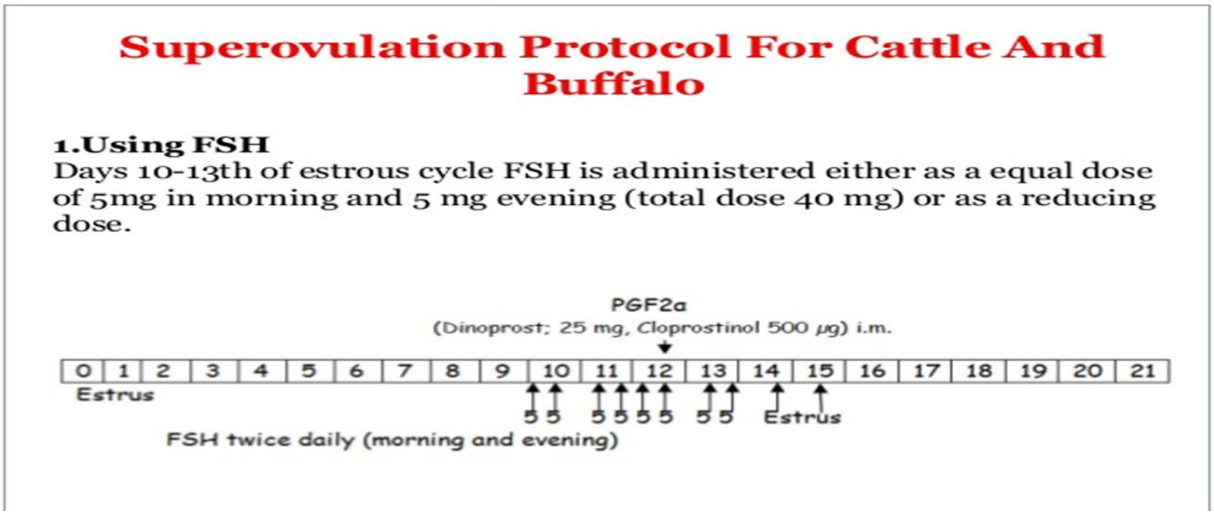
➢ Best time for superovulation between 9-14 days of estrus cycle in cow.

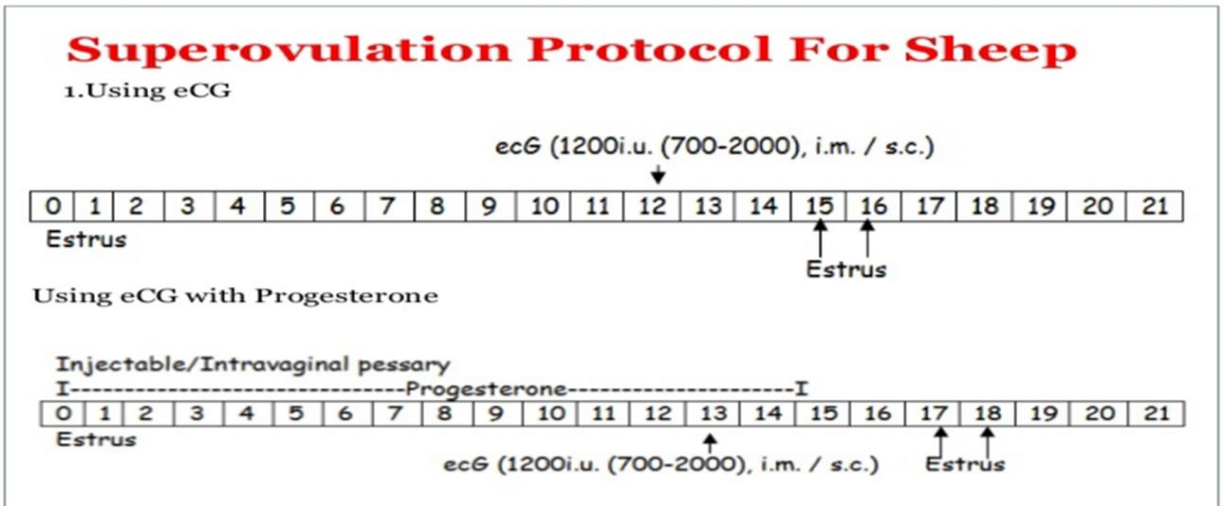
➢ FSH are injected twice daily for four days.

➢ Half life of FSH in the cow is short.

Superovulation in Doe

❖ When PMSG is used single injection 24-48 prior to CIDR removal is administrated.




Superovulation Protocol For Sheep
1.Using eCG
ecG (1200i.u. (700-2000), i.m. / s.c.)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
Estrus
Estrus
Using eCG with Progesterone
Injectable/Intravaginal pessary
I----------Progesterone----------I
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
Estrus
ecG (1200i.u. (700-2000), i.m. / s.c.)
Estrus