

Popular Article

Repeat Breeding Syndrome in Cows: An Overview

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Introduction

The Synonyms of the repeat breeding cows are Cyclical non-breeders, Repeaters, and Repeat breeders.

Definition

Repeat breeder is the one that has been bred two or more times with fertile semen but failed to conceive, which they earned it as normal or nearly normal estrous cycles and estrous periods along with the following

Characteristics:

- It should have a normal estrous cycle length of 21 days.
- It should be free from palpable abnormalities of the genital tract.
- The genital tract should be free from any palpable abnormalities; it should have normal vaginal discharge during the estrous period.
- The animal must be in positive energy balance, it should be at least calved once and It should be less than 10 years old.

One important point to be noted here is, it should be at least calved once. Here we are including heifer also nowadays, but as per the classical definition, the repeat breeder must be at least once calved.

Prevalence of the conditions in cows and buffaloes, crossbred animals have affected the percentage of (17.57%), Buffaloes have the problem of 12.74%, Indigenous cows are less commonly affected, it is 8.64%, 30.4% of the cattle and buffaloes were culled for mainly infertility problem, among the various infertility problem, repeat breeder alone costs about 18 to 20% of the infertility problem.

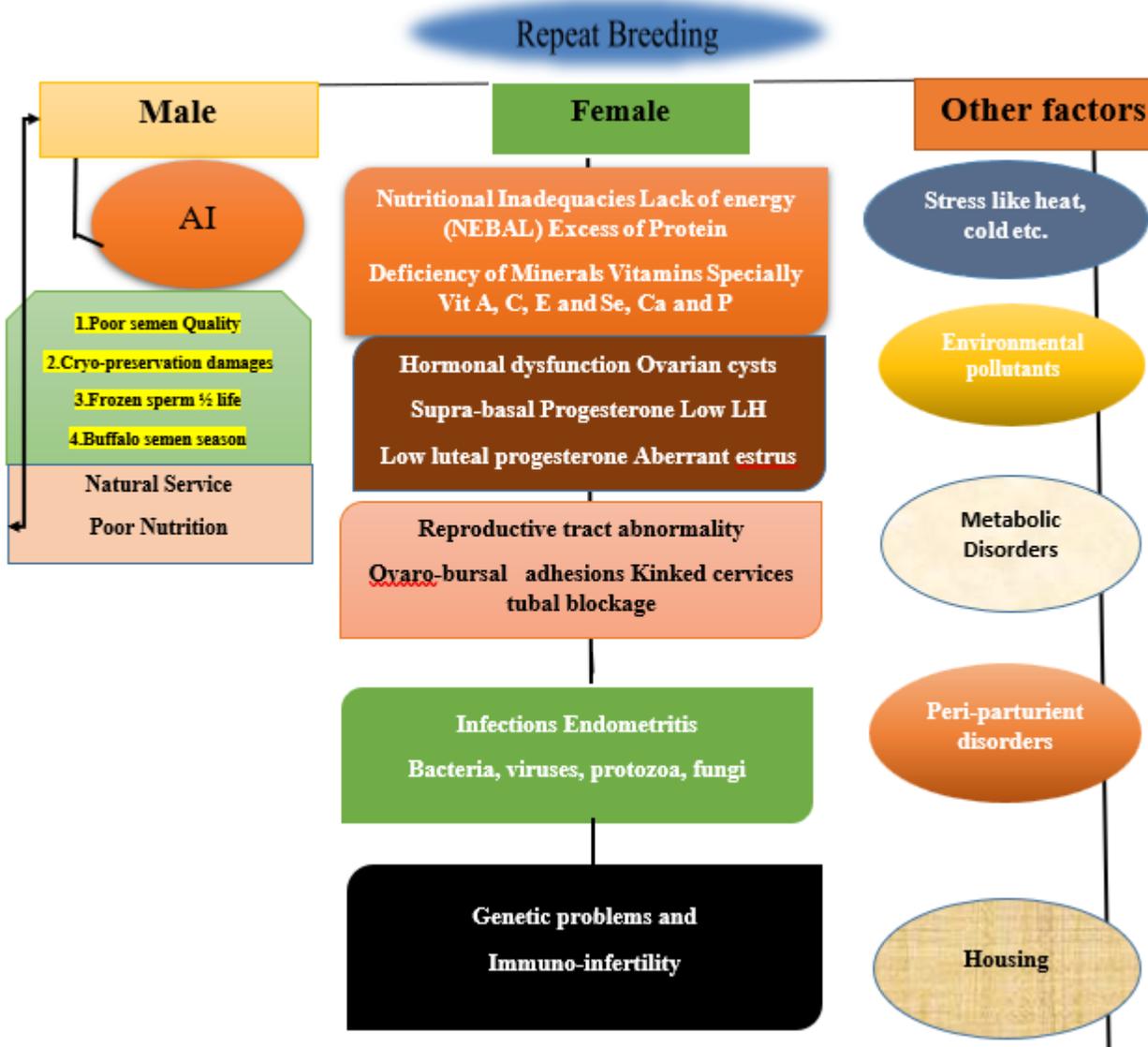
Importance in Economy, repeat breeder causes very heavy economic loss, the cost involved is a Breeding cost, Treatment cost, feeding cost, and Labour cost. Suppose if an animal is not conceiving a single day, the maintenance cost is about to ₹200, that is the loss is ₹200 per day, nowadays. If one cycle is lost, $21 * 200$, so ₹4200 is a loss to the farmer. Repeat better even after two or three cycles, it is not getting conceived, that is why the basic economic losses are caused by this delay in conception due to repeat breeding syndrome.

Etiology of Repeat breeders

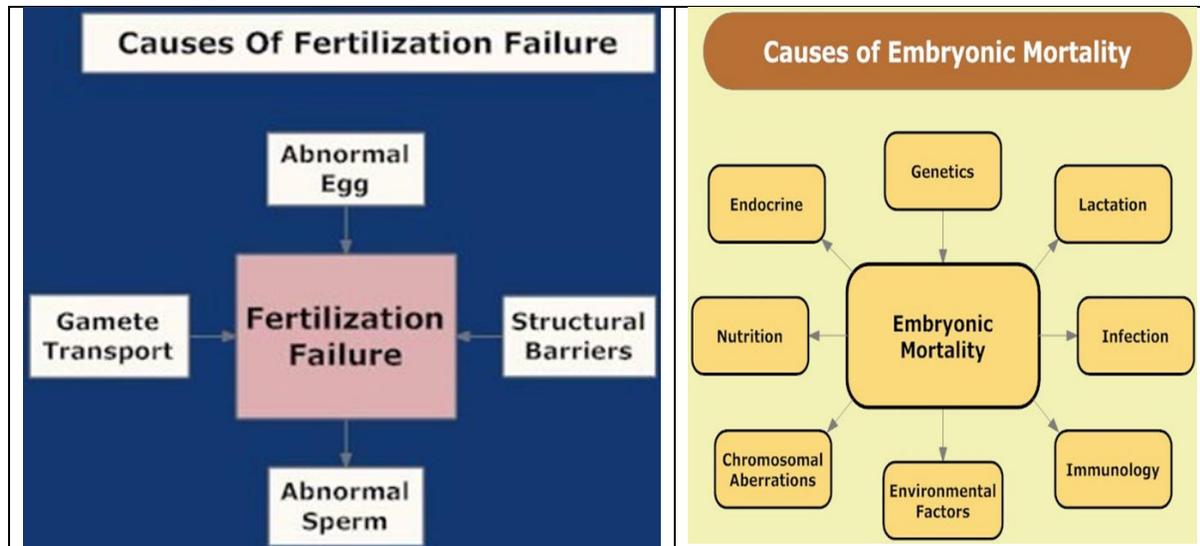
There are two types of classifications, one is by Casida and co-workers and another one is by Roberts and Zemjanis. So first the Casida co-workers classified the repeat breeding syndrome as fertilization failure and the early embryonic death.

Another classification is the Zemjanis and Roberts classification, which includes there are five types of etiological factors, one is Congenital or genetic anatomical defects of the reproductive tract in cows. The second is Congenital or genetic acquired defects of sperm, ovum, and zygote. Third is Infectious or traumatic inflammatory causes, fourth is Endocrine dysfunction, fifth is Managemental and nutritional deficiencies causing repeat breeding syndrome.

Fertilization is not the matter; the Embryonic development is the matter for their successful fertility. So, it also constitutes about 25% of the reproductive wastage, Fertilizing failure constitutes about 15% but now



the recent literature if you see the fertilization is not the matter, almost in 95% of the animals' fertilization takes place, further development of the embryo is the crucial factor in determining the fertility of the cows and buffaloes. So, in our infertility problems, dealing with Early Embryonic Death is more important than Fertilization failure. It constitutes about 25



Predisposing Factors

- Nutrition Negative energy balance
- High Protein changes uterine pH & decrease P4
- Micronutrients Ca, P, Mg, Cu, Zn, Vit A, E, Se
- Endocrine dysfunction (suprabasal P4)
- Infection/reproductive tract abnormality
- Poor semen quality
- Age
- Genetic
- Immunologic Antisperm antibody
- Peri-Parturient disease
- Stress Heat most important

Therapy

- Evaluate semen
- Evaluate for genital infection and treat
- Evaluate for anatomic defects
- Evaluate for Ovulatory defects
- Evaluate for nutrition and management and advice appropriate measures of correction
- Evaluate reproductive hygiene and insemination procedures and adopt corrective measures

Specific corrective measures Genital tract infection



- Intrauterine/parental antibiotics
- Prostaglandins
- Immunomodulators
- ❖ Oyster glycogen 500 mg in 50 mL PBS I/Ut.
- ❖ LPS 100 Ug in 30 mL PBS I/Ut

Agents alter the Uterine environment

Antioxidants: 4mM Taurine + 50 mM fructose in

PBS before AI

Vitamin C Inj Ascovet 20 mL before AI

Enzymes: Trypsin, Chymotrypsin, papain I/Ut.

Uterine motility stimulants

Mifepristone, clitoral massage

Hormonal therapy



❖ Ovulation induction agents

- hCG Injection Pubergen/Chorulon 1500-3000 IU at AI
- GnRH
- PG at AI
- Antiprolactin Bromocryptine 10 mg orally
- Dextrose 500mL IV at AI plus Bovine insulin 0.2 IU/Kg IV or Metformin orally

❖ Luteal support:



- hCG injection at 4-5 days of AI
- Progesterone injection 500 mg at 5 days of AI
- Recombinant Bovine Somatotropin 500 mg SC at AI
- Antiestrogens Tamoxifen citrate.

Other measures

- Repeated inseminations
- Mineral vitamin supplements
- Cooling of heat-stressed cows/ buffaloes
- Adequate hygiene at parturition & at AI
- Regular and frequent check of semen
- Addition of sperm motility enhancers when liquid semen is used eg. caffeine
- Prevention of natural mating with scrub bulls.

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